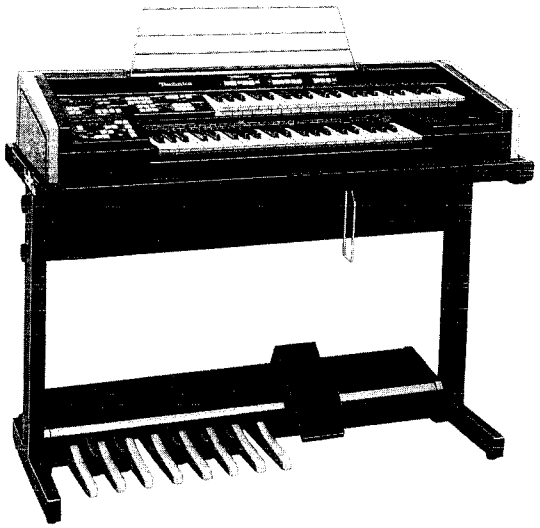
ORDER NO. EMID871203

Service Manual

Electronic Organ

SX-C300

(MC), (EN), (EI), (EH), (EB), (EF),
(EZ), (EW), (EP), (EK), (XL), (XR)



AREAS

(MC): Canada	(EZ): Germany
(EN): Norway, Sweden, Denmark, Finland	(EW): Switzerland
	(EP): Spain
(EI): Italy	(EK): the United Kingdom
(EH): Holland	(XL): New Zealand
(EB): Belgium	(XR): Australia
(EF): France, Austria	

Specifications

KEYBOARD		UPPER MANUAL: 44 KEYS LOWER MANUAL: 44 KEYS PEDAL KEYBOARD: 13 KEYS
ONE TOUCH PLAY		○
FULLBAND SETTING COMPUTER		RECORD*, FSC, 1~5 (LOWER KEYBOARD)
PLAY SEQUENCER		RECORD*, BASS, LOWER, UPPER, SOLO
VOICE SETTING COMPUTER		RECORD*, SET, 1~7, CANCEL 16×2 COMBINATION (RHYTHM)
ORCHESTRAL CONDUCTOR		UPPER: POLY, SPECIAL, SOLO LOWER: POLY, SPECIAL, SOLO
UPPER TONES	POLY	PIANO, ELECTRIC PIANO, HARPSICHORD, CLAVI, JAZZ GUITAR, HAWAIIAN GUITAR, SYNTHE, ACCORDION, TROMBONE, CLARINET, STRINGS, SAXOPHONE, ORGAN (RECORD*, 10 ORGAN PRESETS) TAB VOICES: FLUTE 16′, 8′, 4′, 2′ UPPER POLY VOLUME
	SPECIAL	PIANO, ELECTRIC PIANO, HARPSICHORD, CLAVI, JAZZ GUITAR, GUITAR, SYNTHE, FRENCH HORN, SAXOPHONE, TROMBONE, TRUMPET, VIBRAPHONE, SPECIAL VOLUME
	SOLO	FLUTE, PAN FLUTE, SYNTHE, CLARINET, SAXOPHONE, TROMBONE, TRUMPET, VIOLIN, SOLO VOLUME
LOWER TONES	POLY	PIANO, ELECTRIC PIANO, HARPSICHORD, SYNTHE, JAZZ GUITAR, TROMBONE, STRINGS, SAXOPHONE, ORGAN (RECORD*, 10 ORGAN PRESETS) TAB VOICES: FLUTE 8′, 4′, 2′ LOWER POLY VOLUME
	SPECIAL	○ (U/L)
	SOLO	○ (U/L)
BASS TONES		BASS 16′, BASS 16′+8′, BASS 8′, SYNTHE BASS, ACOUSTIC BASS, CHOPPER BASS, ELECTRIC BASS, TUBA, BASS VOLUME
EFFECTS	SUSTAIN	UPPER, U & L SPECIAL, LOWER, BASS, KNEE LEVER
	CHORUS TREMOLO CELESTE	UPPER POLY, U & L SPECIAL, U & L SOLO, LOWER POLY
	REVERB	CONTROL
	GLIDE	FOOT SWITCH

TECHNI-CHORD		RECORD* ON, CLOSE/PROGRAM
RHYTHM	SELECTORS	MARCH, BALLAD, 8 BEAT, CHA CHA, RHUMBA, JAZZ WALTZ, WALTZ, TANGO, SAMBA, BOSSA NOVA, DISCO Ⅰ, DISCO Ⅱ, 16 BEAT, SALSA, SWING, SHUFFLE
	CONTROLS	SYNCHRO & BREAK, START/STOP, TEMPO, DRUMS VOLUME
FILL IN & INTRO		Ⅰ, Ⅱ, SOLO
ENDING		ON
BASS & ACCOMP		Ⅰ/Ⅱ, MELODIC, ACCOMP VOLUME
PLAY MODE		PCC, FINGERED, MEMORY
PROGRAM CHORD COMPUTER		RECORD*, PCC, 𝄞, ◄, ►, 𝄋, 𝄋, 𝄋, 𝄋, 𝄋, D.S., 𝄇, 𝄆, 𝄆𝄇, (LOWER KEYBOARD)
TRANSPOSE		CONTROL (G~C~F♯)
TUNING		○
PROGRAM FUNCTION SWITCH		RECORD*, FOOT SWITCH, KNEE LEVER
MODE SET		RECORD*, MODE SET, MIDI CLOCK, START/STOP, SONG SELECT, SUSTAIN, EFFECT, PROGRAM CHANGE, OCTAVE, MEDLEY
OTHERS		POWER SWITCH, MAIN VOLUME, EXPRESSION PEDAL, HEADPHONES JACK, AUX IN, LINE OUT (R/E+L, L), SEPARATED LINE OUT (DRUMS [R/E+L, L], BASS), MAIN MIX SWITCH, EXT I/O (FD) TERMINAL, MIDI TERMINALS (IN, OUT, THRU), PEDAL IN, AC CORD INPUT, SPEAKER SWITCH, INITIAL KEY (LOWER KEYBOARD)
MONITOR OUTPUT		10W
MONITOR SPEAKERS		6cm×13cm 16Ω×2
POWER REQUIREMENT		70W, AC 120/220/240V, 50/60Hz
		70W, AC 120V, 60Hz (NORTH AMERICA)
DIMENSIONS		113.2cm×91.1cm×45.8cm (44-9/16″×35-7/8″×18-1/32″)
WEIGHT	SET UP FOR PLAY	36.3kg (80.0 lbs.)
	BODY IN CASE	28.5kg (62.8 lbs.)
	PEDAL & STAND IN BAG	18kg (39.7 lbs.)

* Common RECORD button is used for these buttons.
• Specifications are subject to change without notice for further improvement.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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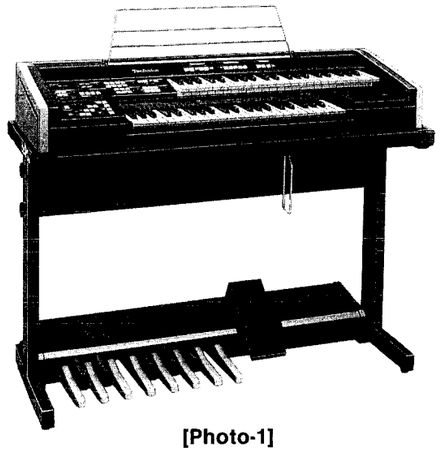
ARRANGEMENT OF CONTROL PANEL

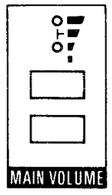


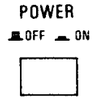
[Photo-1]

Most buttons are equipped with indicators which light up when in operation.

■ Power/Main Volume Controls

Pressing the **POWER** switch turns the organ on.
MAIN VOLUME adjusts the loudness of the entire organ.



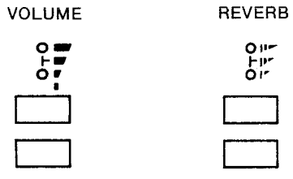


■ Controls

Volume and effects on this organ are controlled by 4-stage buttons, except the **TRANSPOSE** and **RHYTHM TEMPO** controls.

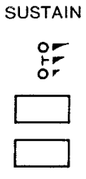
■ Volume, Reverb

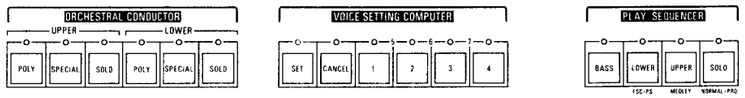
- When the upper button is pressed, the upper indicator lights up and the volume or effect is at the maximum.
- If both buttons are pressed simultaneously, the volume or effect returns to the normal or intermediate level and both indicators turn on.
- When the lower button is pressed, the lower indicator lights up and the volume or the effect is decreased.
- If the lower button is pressed again, the volume or effect is at the minimum (or turned off, in the case of DRUMS, ACCOMP and REVERB) and both indicators are off.

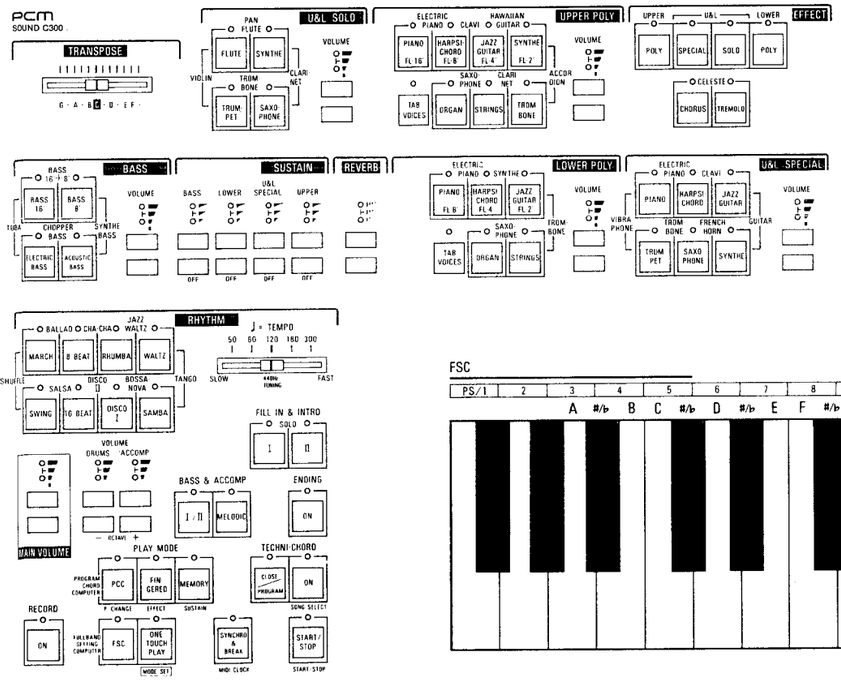


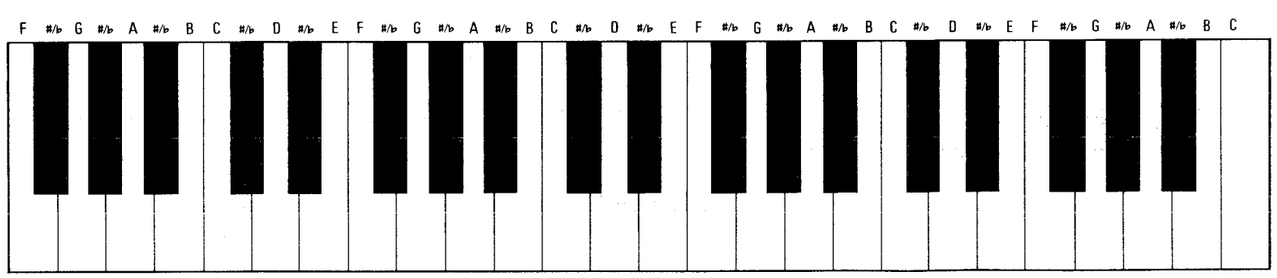
■ Sustain

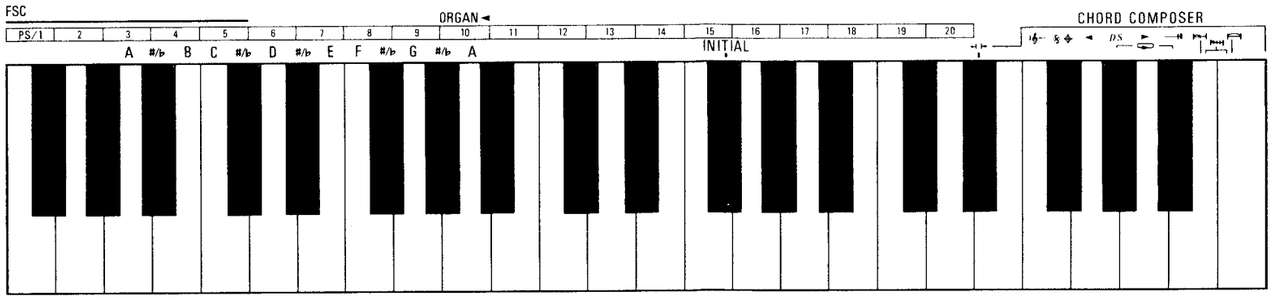
- When the upper button is pressed, the upper indicator lights up and the sustain effect is at the maximum.
- If both buttons are pressed simultaneously, the sustain effect returns to the normal or intermediate level and both indicators turn on.
- If the lower button is pressed when either or both of the indicators are lit, the sustain effect is turned off and both indicators turn off.
- When the lower button is pressed again, the lower indicator lights up and the sustain effect is at the minimum.





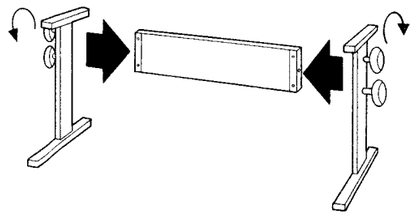






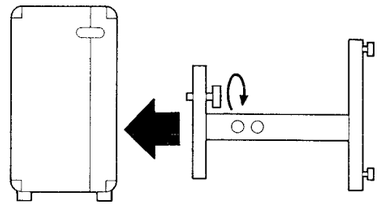
HOW TO ASSEMBLE THE ORGAN

1 Assemble the stand using four thumb screws.



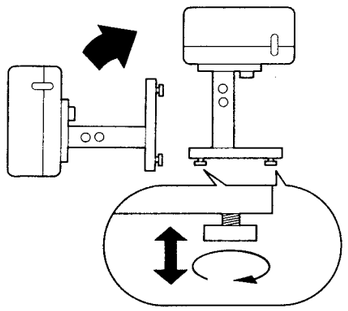
[Fig. 1]

2 Using two thumb screws, firmly secure the stand to the organ in its case.



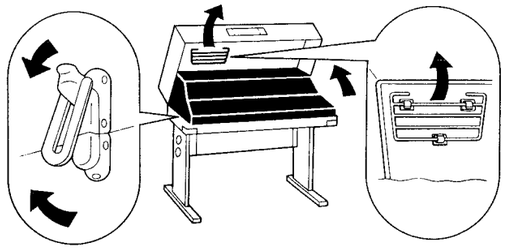
[Fig. 2]

3 Then raise the organ itself.
Adjust bolt Ⓐ to level the stand.



[Fig. 3]

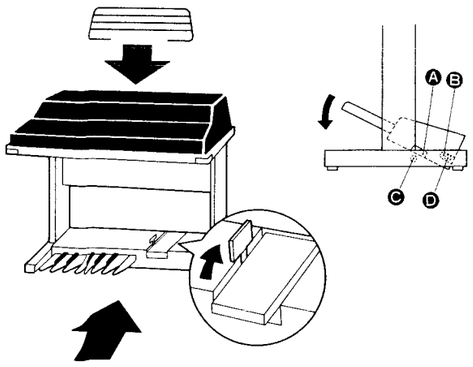
4 Remove the two latches, and take off the organ case. Remove the music rack from the organ case and set it aside.



[Fig. 4]

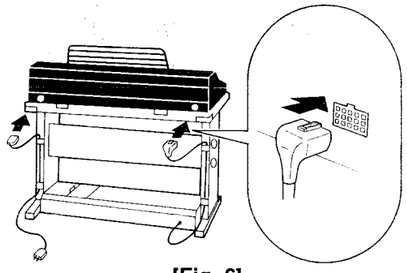
5 Set the pedal keyboard unit in position and insert the music rack.
(Setting the pedal keyboard unit)
Put front groove Ⓐ of the pedal keyboard unit onto front pin Ⓒ of the stand, and push the pedal keyboard unit until back groove Ⓑ fits onto back pin Ⓓ.

- Pull out the foot switch located on the left side of the expression pedal.



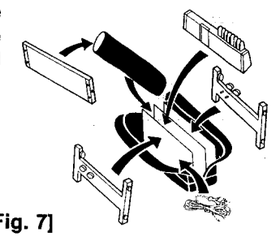
[Fig. 5]

6 Plug the cord from the pedal keyboard unit into the connector of the organ. Also connect the AC cord to the connector of the organ.



[Fig. 6]

- When carring, pack the pedal keyboard unit, the stand and the AC cord in the carrying bag.

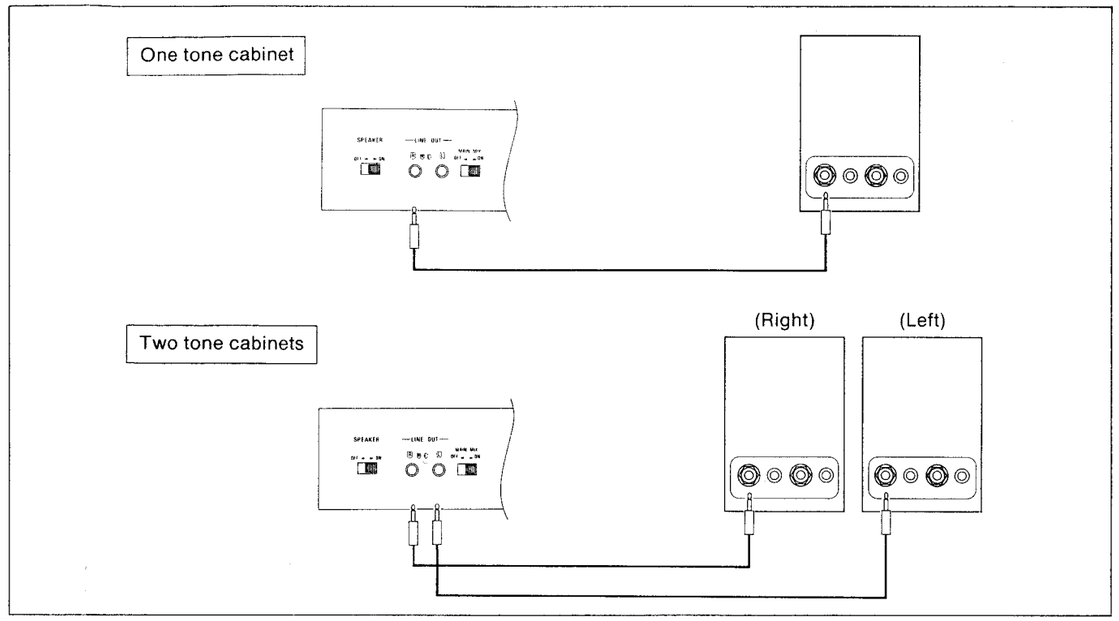


[Fig. 7]

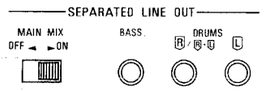
CONNECTION TO TONE CABINET

- This organ is equipped with monitor speakers only. For stage performances, use the SY-T70 exclusively designed tone cabinet.

The following connections are possible depending on the number of tone cabinets in use.

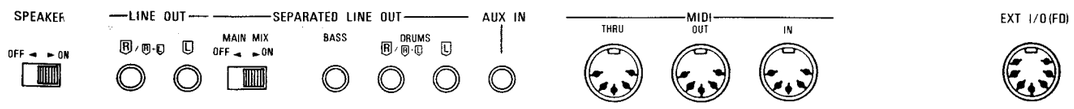


In addition, when the **SEPARATED LINE OUT** terminal is used, the **DRUMS** and **BASS** sounds can be output separately.



- When the **MAIN MIX** switch is set to **ON**, the **BASS** and **DRUMS** signals are also output from the **LINE OUT** terminal. With **MAIN MIX** set to **OFF**, they are output only from the **SEPARATED LINE OUT** terminal.

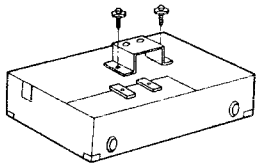
ARRANGEMENT OF REAR PANEL



HOW TO INSTALL THE DIGITAL DISK RECORDER

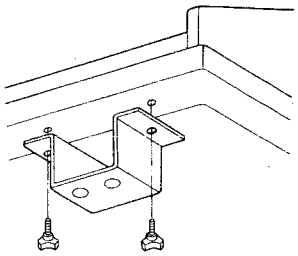
If using the optional Digital Disk Recorder SY-FD5, use the included metal shelf to install it as shown in the figures below.

1 Remove the metal shelf from the organ case.



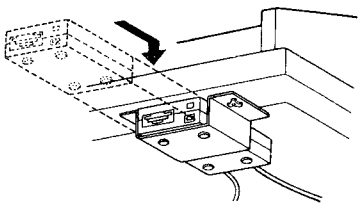
[Fig. 8]

2 Attach the shelf to the organ under the right side.



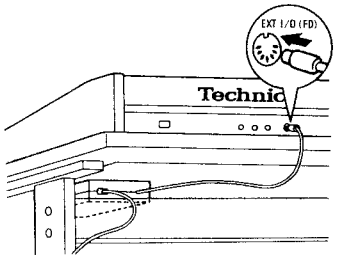
[Fig. 9]

3 Insert the Digital Disk Recorder so that the two front legs fit into the holes in the shelf.



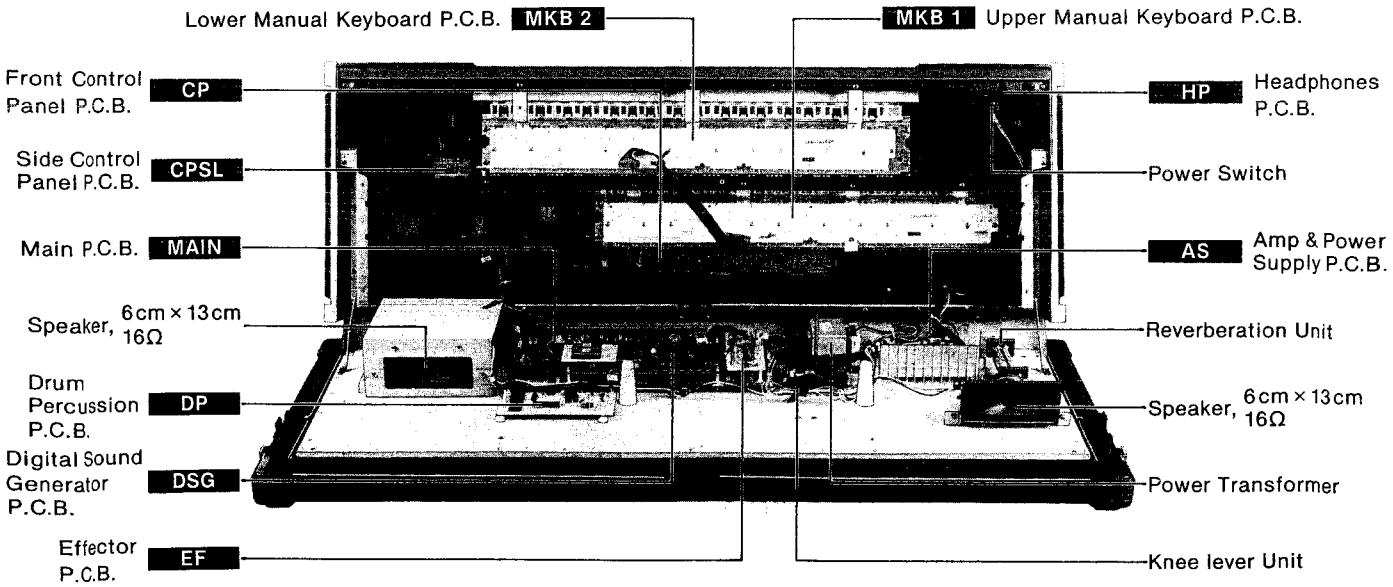
[Fig. 10]

4 Connect the Digital Disk Recorder connector cable to the **EXT I/O (FD)** terminal on the rear of the organ. Connect the power cord to the Digital Disk Recorder.



[Fig. 11]

PARTS LOCATION

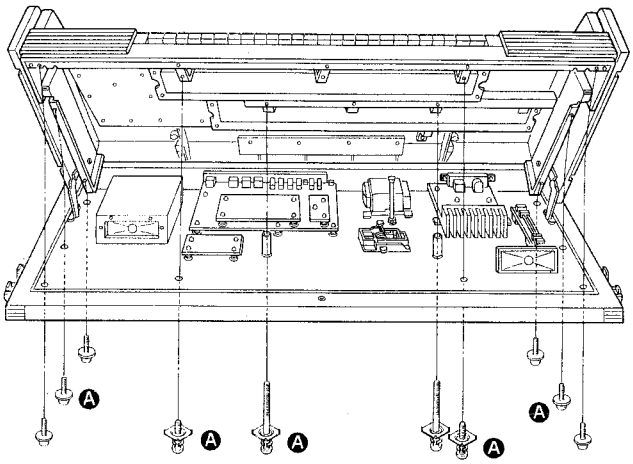

Lower Manual Keyboard P.C.B. MKB 2
MKB 1 Upper Manual Keyboard P.C.B.
Front Control Panel P.C.B. CP
Side Control Panel P.C.B. CPSL
Main P.C.B. MAIN
Speaker, 6cm × 13cm 16Ω
Drum Percussion P.C.B. DP
Digital Sound Generator P.C.B. DSG
Effector P.C.B. EF
HP Headphones P.C.B.
Power Switch
AS Amp & Power Supply P.C.B.
Reverberation Unit
Speaker, 6cm × 13cm 16Ω
Power Transformer
Knee lever Unit

[Photo-2]

DISASSEMBLY PROCEDURE

1 Upper Cabinet

① Remove the 10 screws Ⓐ on the bottom of the shelf-board.
Then the upper cabinet can be opened upwards.

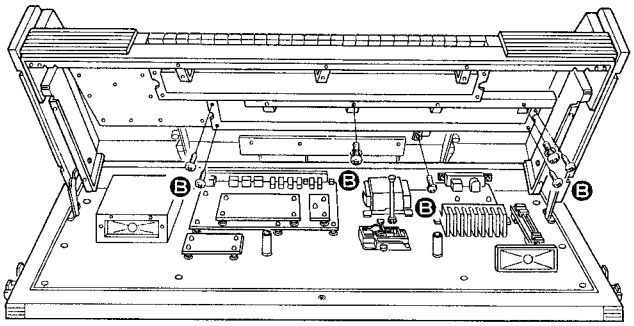


[Fig. 12]

2 Upper Manual Keyboard

- Open the upper cabinet according to step 1.

① Remove the 7 screws Ⓑ which fasten the upper manual keyboard chassis. Then the upper manual keyboard can be removed.

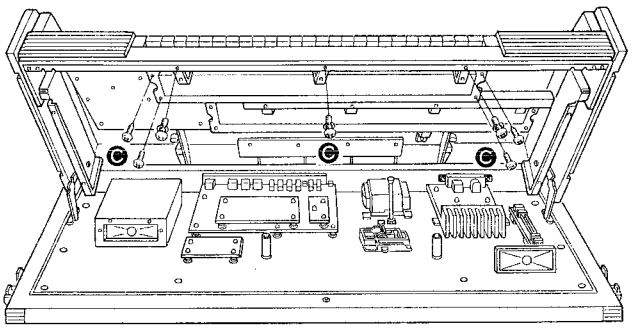


[Fig. 13]

3 Lower Manual Keyboard

- Open the upper cabinet according to step 1.

① Remove the 7 screws Ⓒ which fasten the lower manual keyboard chassis. Then the lower manual keyboard can be removed.



[Fig. 14]

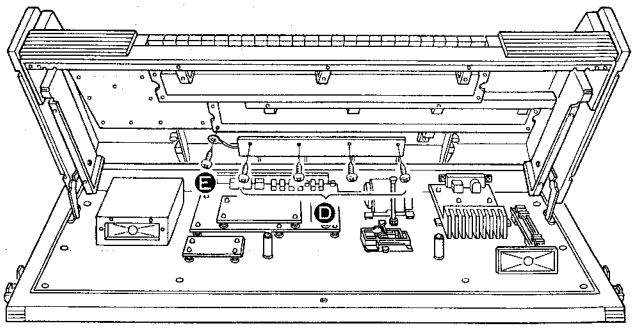
4 Front Control Panel P.C.B.

- Open the upper cabinet according to step 1.

① Remove the 4 screws Ⓓ which fasten the front control panel P.C.B. and 1 screw Ⓔ for the earth terminal. Then the front control panel P.C.B. can be removed.

NOTES:

- When removing the front control panel P.C.B., fasten the button of them to the upper cabinet by a tape at first; otherwise the buttons will fall down.



[Fig. 15]

5 Side Control Panel P.C.B.

- Open the upper cabinet according to step 1.

① Pull out the transpose and tempo control knobs.

② Remove the 13 screws Ⓕ which fasten the side control panel and 1 screw Ⓖ for the earth terminal.

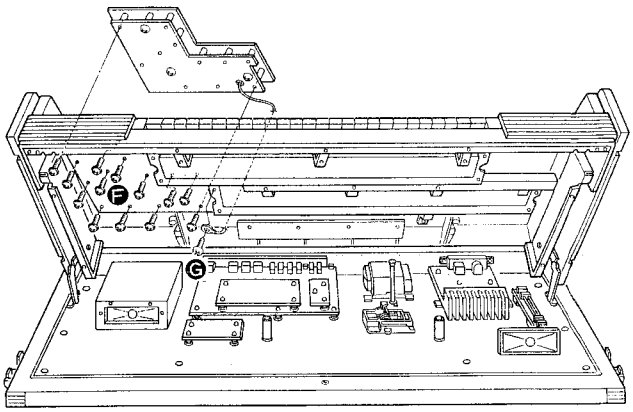
Then the side control panel can be removed upwords.

③ Remove the 3 screws Ⓗ on the side control panel P.C.B..

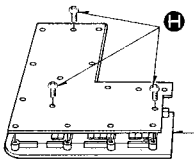
NOTES:

① When removing the side control panel P.C.B., set the button side down as shown in Fig. 17.

② If the button side is set upward, the buttons will fall down.



[Fig. 16]



[Fig. 17]

6 Printed Circuit Board (MAIN, AS)

- Open the upper cabinet according to step 1.

MAIN Main P.C.B.

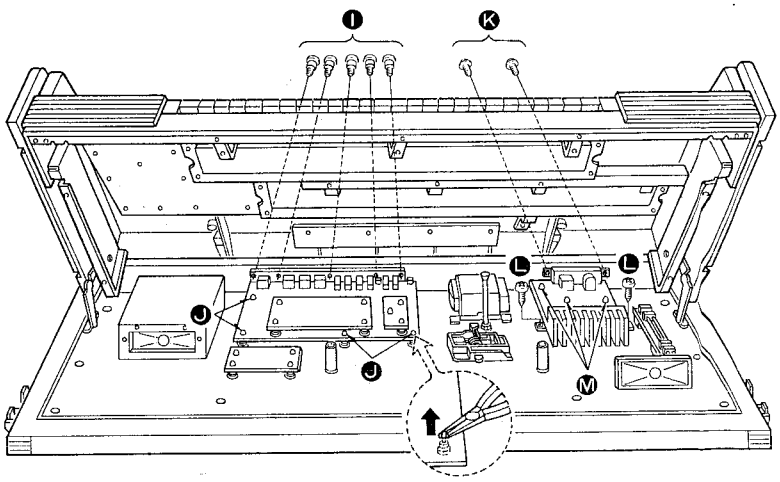
① Remove the 5 screws Ⓘ on the rear accessory panel.

② Remove the 4 claws Ⓙ which fasten the main P.C.B..

AS Amp & Power Supply P.C.B.

① Remove the 2 screws Ⓚ on the rear accessory panel and 2 screws Ⓛ which fasten the Amp unit.

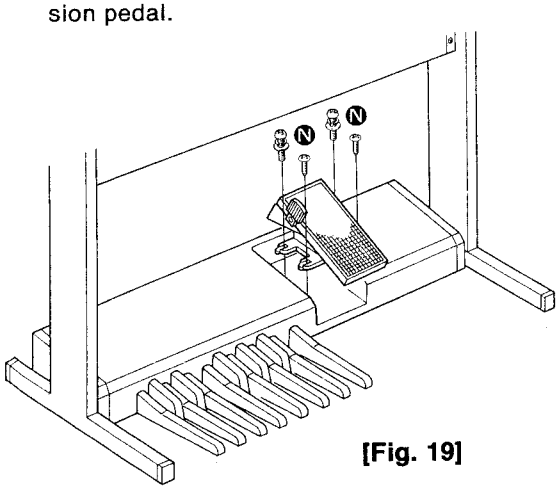
② Remove the 3 claws Ⓜ which fasten the Amp & power supply P.C.B..



[Fig. 18]

7 Expression Pedal

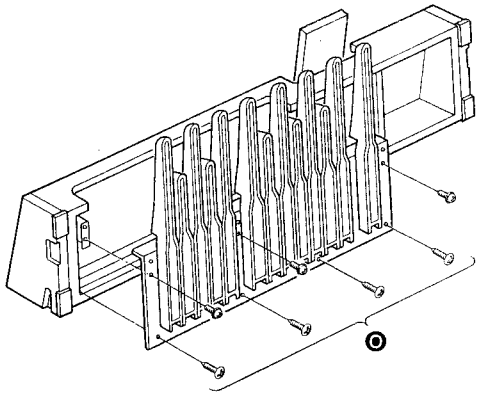
① Remove the 4 screws Ⓝ which fasten the expression pedal.



[Fig. 19]

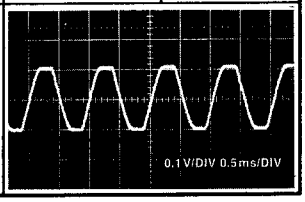
8 Pedal Keyboard

① Remove the 7 screws Ⓞ which fasten the pedal keyboard.

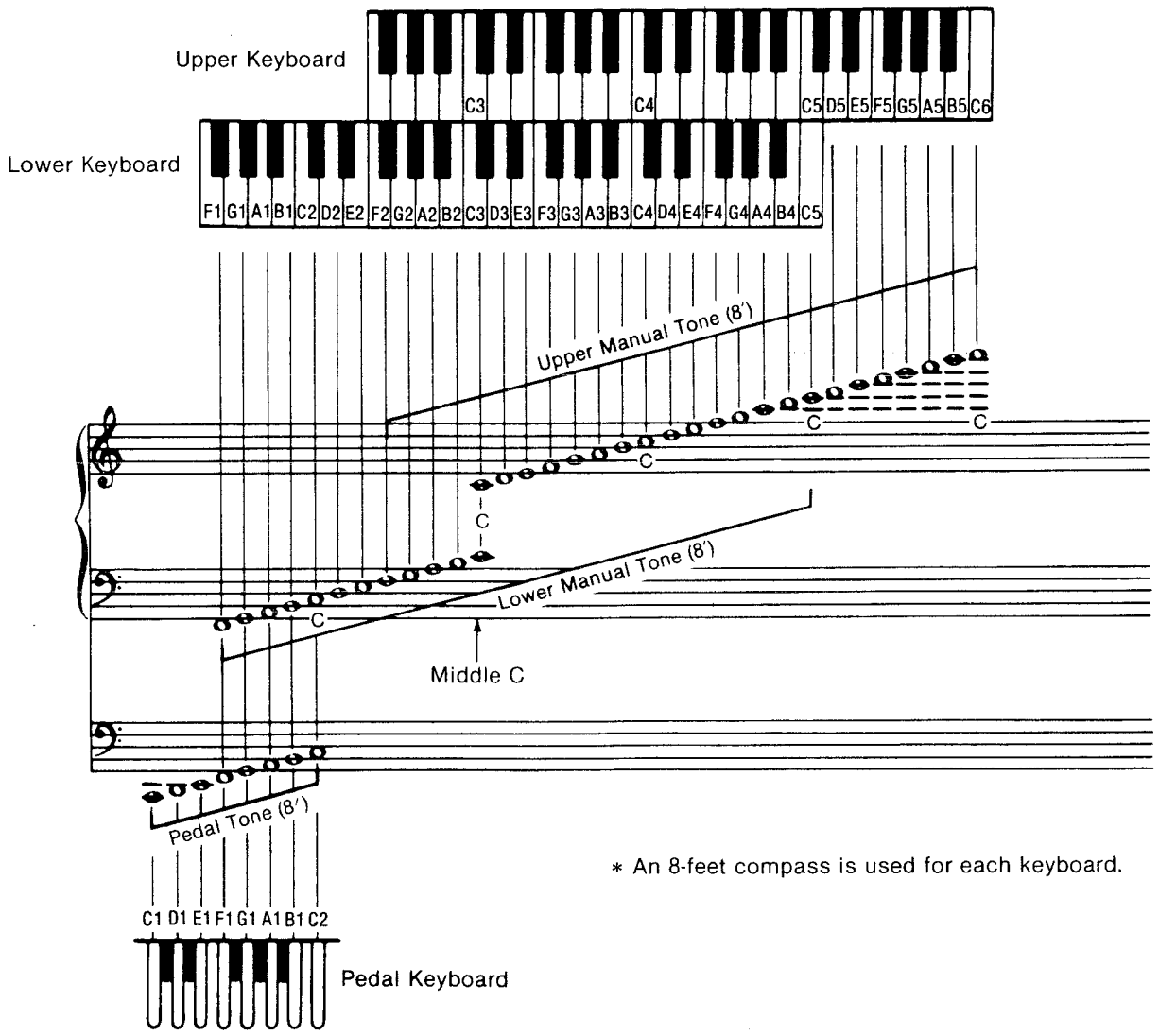


[Fig. 20]

ADJUSTMENT PROCEDURE

ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT P.C.B.	ADJ. POINT	CONNECT METER TO	METER READING
Reverb Depth	L. Poly...Tab Vices: FL-8′, 4′, 2′ L. Poly volume...Max. Reverb Volume...Max. Lower Keyboard...C3~B3	Electric voltmeter	MAIN P.C.B.	VR1	IC42-① Pin	200mVrms
	1. Connect the electric voltmeter to IC42-① Pin of MAIN P.C.B. 2. Adjust VR1 so that the output level of IC42-① Pin is 200mVrms when the C3~B3 keys (7 white keys) of lower keyboard are depressed.					
BBD Bias	Any position	Oscilloscope and Oscillator	EFFECTOR P.C.B.	VR1	Check Point ❸	Shown below
	1. Connect the oscilloscope to check point ❸ of EFFECTOR P.C.B. 2. Input 1KHz sine-wave to IC6-③ pin by oscillator through capacitor of less than 50V 1μF. Then adjust the output level of the oscillator until the sine wave on the oscilloscope is clipped. 3. Adjust VR1 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.					

KEYBOARD RANGES


Upper Keyboard
C3
C4
C5 D5 E5 F5 G5 A5 B5 C6
Lower Keyboard
F1 G1 A1 B1 C2 D2 E2 F2 G2 A2 B2 C3 D3 E3 F3 G3 A3 B3 C4 D4 E4 F4 G4 A4 B4 C5
Upper Manual Tone (8′)
Lower Manual Tone (8′)
Middle C
Pedal Tone (8′)
C1 D1 E1 F1 G1 A1 B1 C2
Pedal Keyboard

* An 8-feet compass is used for each keyboard.

PRECAUTIONS BEFORE SERVICING

■ **Important safety notice:**

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

■ **Measuring of output waveforms**

1. The waveform was measured by "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may somewhat change due to variation of timing of measure.
2. The voltage shown in the photo is 1/10 of the actual value. However, the actual voltage is 10 times of as shown in this photo.

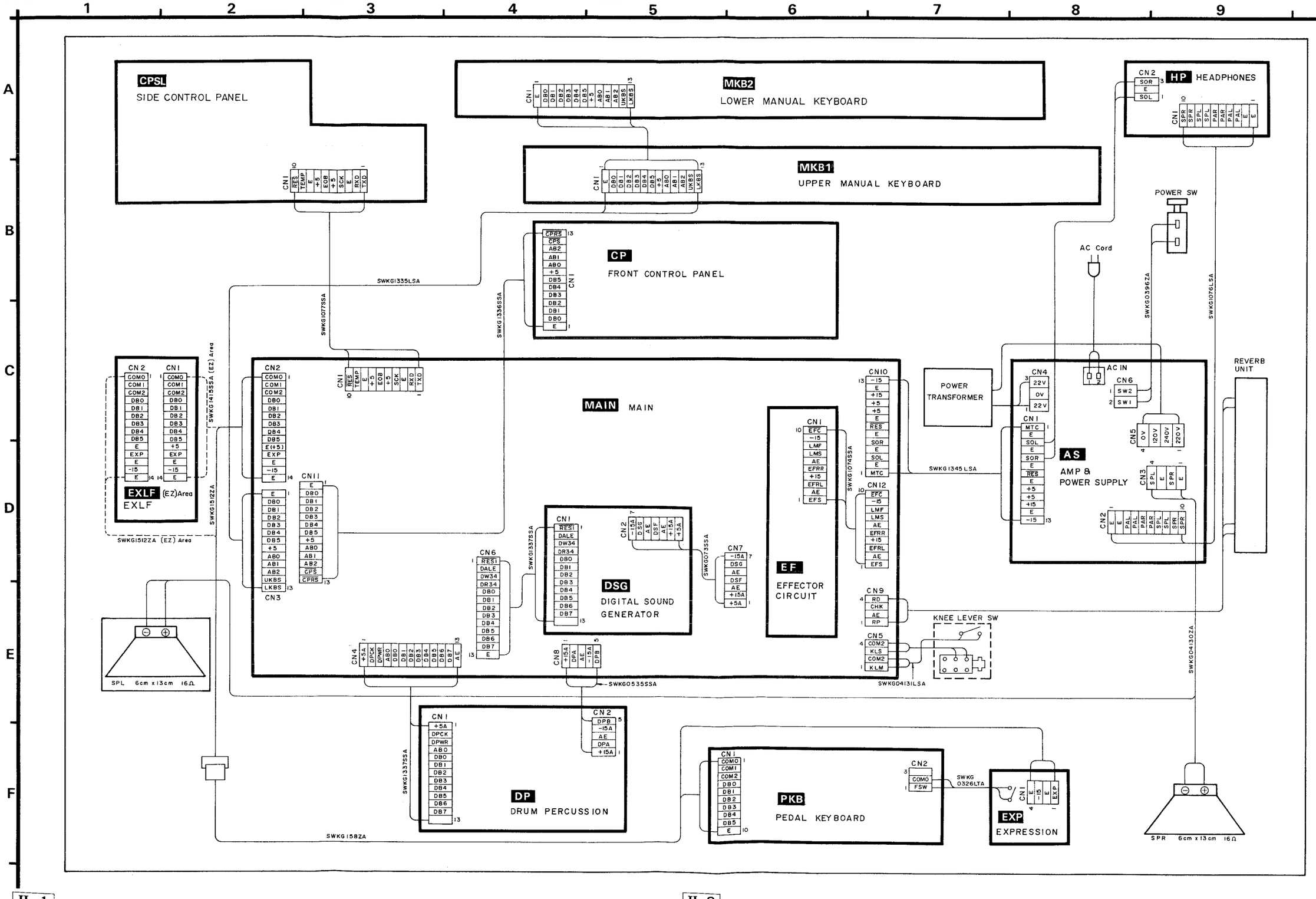
■ **Symptoms which appear to be signs of trouble**

The following changes in performance may occur in the Technics organ but do not indicate trouble:

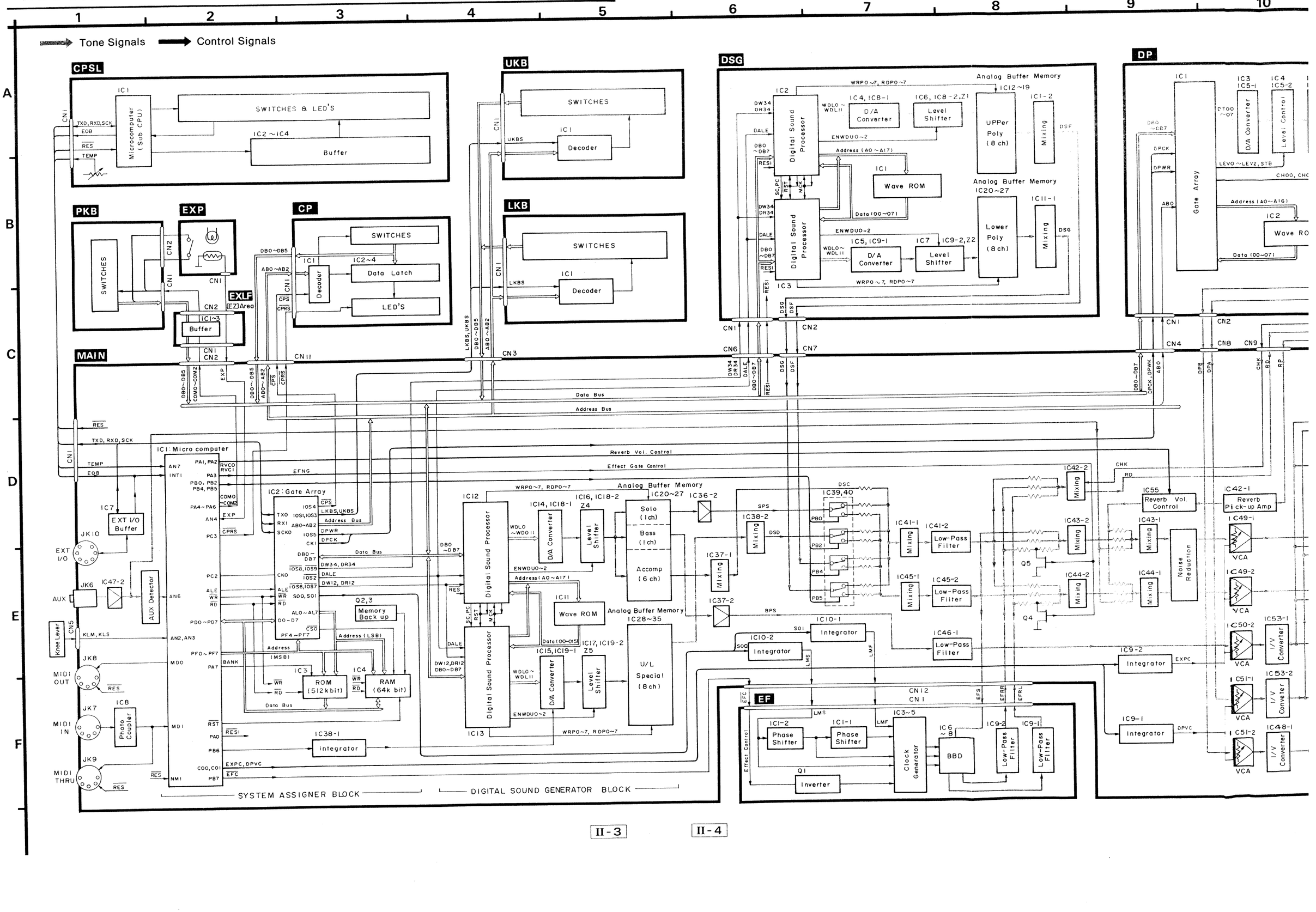
Phenomenon	Remedy
The buttons, keyboards, etc. malfunction.	Press the **FSC** button first to turn it on and then press the **INITIAL** key on the lower keyboard. • If the buttons, keyboards, etc. do not return to normal, turn the **POWER** switch off once, then turn on again.
Different voices are heard in the lower and upper half keys on the upper keyboard.	The lower portion of the upper manual keyboard is used to sound the lower manual voices when the lower manual keyboard is required for programming functions.
A rhythm does not start or no rhythm sounds.	• No rhythm sounds if the **DRUMS VOLUME** button is turned off. • The rhythm does not start when you turn on a **PLAY SEQUENCER** button in which a tune with no rhythm is stored.
The knee lever and foot switch do not operate properly. For example, the knee lever does not turn the sustain function on and off.	Any functional on and off operation other than the factory presets are storable in these switches. For example, the knee lever can turn the Techni-Chord on and off.
The **TREMOLO** speed is improper.	The **TREMOLO** speed is adjustable. Adjust to your favorite speed.
The contents of the **PROGRAM CHORD COMPUTER, FULLBAND SETTING COMPUTER,** etc. cannot be stored.	After pressing the **RECORD** button, press the necessary buttons within 5 seconds. The **RECORD** button turns off after a lapse of 5 seconds, making storage operation impossible. Press the **RECORD** button again.
When storing the created tones and effects in the **VOICE SETTING COMPUTER**, voices other than those desired are stored.	• To store your created tones and effects, press the 1~7 buttons of the **VOICE SETTING COMPUTER** while the **SET** button is held down. • To select your favorite voice from the 32 factory-preset voices, press the **RECORD** button and depress one of the number buttons of the **VOICE SETTING COMPUTER** within 5 seconds. Then press **RHYTHM** button(s). Finally, press the selected number button again.
Storage is not possible with the **PROGRAM CHORD COMPUTER**.	• Check that the **PCC** indicator is slowly flashing. Pressing the **FINGERED** button turns of the **RECORD** button, making storage operation impossible. • Do not release the left hand (chord designation) before pressing the measure keys (, , and).

Phenomenon	Remedy
The stored registration cannot be used when performance is started with the **PLAY SEQUENCER** button turned on.	To use the stored registration, turn on the **FSC** button and then press the 1 key on the lower keyboard.
The stored introduction is not reproduced during automatic performance.	• Set the beginning of a song, such as an introduction, before turning on the **RECORD** button. • To add an introduction after the **RECORD** indicator and **PLAY SEQUENCER** indicator flash, set it after turning on the **FSC** button. Then turn off the **FSC** button.
No storage is possible even when the **RECORD** indicator and **PLAY SEQUENCER** indicator are slowly flashing.	• No storage is possible when the **FSC** button is turned on. Turn it off before playing. • If any **PLAY SEQUENCER** indicator is lit, press the **START/STOP** button for automatic performance of the stored part. Another part can then be stored.
The quick rhythm tempo is delayed when the **PLAY SEQUENCER** is used.	This occurs when too many tones are played at one time. Slow down the tempo (to about ♩ =180) or reduce the number of tones played at a time.
Different tones and effects are stored in the **FULLBAND SETTING COMPUTER (FSC)**.	If the **VOICE SETTING COMPUTER (VSC)** function is selected, the stored contents in this button are stored into the **FSC**. When the tones and effects selected by the **VSC** are changed, store them in the **VSC** again before storage in the **FSC**.
The cabinet becomes heated to some degree.	The Technics organ has a built-in power source that heats the cabinet to some degree. This is not an indication of trouble.
Sustain does not function.	Sustain does not function for the following voices. • Poly: Accordion, Trombone, Clarinet, Saxophone • Special: French Horn, Saxophone, Trombone, Trumpet
The glide effect does not function.	The glide effect does not function for the following voices. • Poly: Piano, Electric Piano, Harpsichord, Clavi, Strings • Special: Piano, Electric Piano, Harpsichord, Clavi, French Horn, Vibraphone • Pedal Voices
The pedal notes are improper when the transpose is used.	The pedal keyboard notes are lowerd one octave when 8′ notes are transposed higher than a major 3rd, and become one octave higher when 16′ notes are transposed to lower than C.
The techni-chord does not function.	Techni-chords cannot be played using the lower seven keys of the upper keyboard.
The monitor speakers do not function.	The sound from the monitor speakers can be turned on and off by the SPEAKER switch on the rear panel.

WIRING CONNECTION DIAGRAM



BLOCK DIAGRAM



SWITCHES
IC1
Decoder
SWITCHES
IC1
Decoder

DSG
IC2
Digital Sound Processor
WRPO~7, RDPO~7
Analog Buffer Memory
IC12~19
UPPer Poly (8ch)
IC1-2
Mixing
DSF
IC4, IC8-1
D/A Converter
IC6, IC8-2, Z1
Level Shifter
WDLO~WDL11
DW34
DR34
DALE
DBO~DB7
RESI
ENWDUO~2
Address (A0~A17)
IC1
Wave ROM
Data (00~07)
SC.PC
RST
MC
IC3
Digital Sound Processor
Analog Buffer Memory
IC20~27
Lower Poly (8ch)
IC11-1
Mixing
DSG
IC5, IC9-1
D/A Converter
IC7
IC9-2, Z2
Level Shifter
WRPO~7, RDPO~7
CN1
CN2
CN6
CN7
DSG
DSF

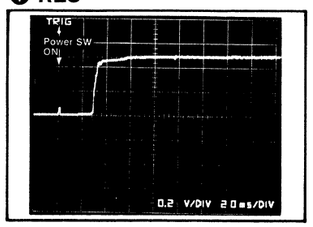
DP
IC1
Gate Array
DBO~DB7
DPCK
DPWR
ABO
DTOO~07
IC3 IC5-1
D/A Converter
IC4 IC5-2
Level Control
IC6 IC7-1, IC8-1
Output Selector
LEVO~LEV2, STB
CHOO, CHO1
IC8-2
IC7-2
Low-Pass Filter
Low-Pass Filter
DPB
DPA
Address (A0~A16)
IC2
Wave ROM
Data (00~07)
Reverberation Unit
CN1
CN2
CN4
CN8
CN9
DBO~DB7
DPCK, DPWK
ABO
DPB
DPA
CHK
RD
RP

AS
Power SW.
AC IN
CN6
AC1
AC2
Primary Circuit
CN5
Power Transformer
CN4
DI~6
Rectifier
IC3
-15V Regulator
IC2
+15V Regulator
IC1 Q5
5V Switching Regulator
Q1, Q2
Reset Circuit
RES
Q3 Q4
Muting Control Circuit
-15
+15
+5
MTC
SOR
SOL
CN10
CN1

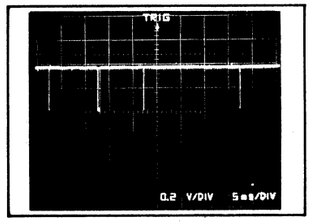
Data Bus
Address Bus
Reverb Vol. Control
Effect Gate Control
~7, RDPO~7
Analog Buffer Memory
IC14, IC18-1
D/A Converter
IC16, IC18-2
Z4
Level Shifter
IC20~27
Solo (1ch)
Bass (1ch)
Accomp (6ch)
IC36-2
SPS
IC38-2
Mixing
DSD
IC37-1
Mixing
IC37-2
BPS
IC11
Wave ROM
Analog Buffer Memory
IC28~35
U/L Special (8ch)
IC15, IC19-1
D/A Converter
Z5
Level Shifter
IC17, IC19-2
WRPO~7, RDPO~7
DSC
IC39, 40
PB0
PB2
PB4
PB5
IC41-1
Mixing
IC41-2
Low-Pass Filter
IC45-1
Mixing
IC45-2
Low-Pass Filter
IC10-1
Integrator
SOI
IC10-2
Integrator
SOO
LMS
LMF
IC46-1
Low-Pass Filter
IC42-2
Mixing
IC43-2
Mixing
IC44-2
Mixing
Q5
Q4
CHK
RD
IC55
Reverb Vol. Control
IC43-1
Mixing
IC44-1
Mixing
Noise Reduction
IC42-1
Reverb Pick-up Amp
IC9-2
Integrator
EXPC
IC9-1
Integrator
DPVC
IC49-1
VCA
IC49-2
VCA
IC50-2
VCA
IC53-1
I/V Converter
IC51-1
VCA
IC53-2
I/V Converter
IC51-2
VCA
IC48-1
I/V Converter
Q6
Q7
IC52-1
I/V Converter
IC52-2
I/V Converter
EF
CN12
CN1
EFC
EFS
EFRR
EFRL
LMS
LMF
IC1-2
Phase Shifter
IC1-1
Phase Shifter
IC3~5
Clock Generator
IC6 ~8
BBD
IC9-2
Low-Pass Filter
IC9-1
Low-Pass Filter
Effect Control
Q1
Inverter
D GENERATOR BLOCK
SW2 (MAIN MIXING)
ON
OFF
+5V
RES
Q28
Muting Control
SW1 (SPEAKER SWITCH)
Q100
Mixing
Q101
Mixing
Q34~37
Buffer
Q38
Q39~42
Buffer
Q43
Q8~11
Buffer
Q29
Q12~15
Buffer
Q30
Q16~19
Buffer
Q31
Q20~23
Buffer
Q32
Q24~27
Buffer
Q33
JK1
JK2
JK3
JK4
JK5
R/R+L
L
BASS
DRUMS
SEPARATED LINE OUT
LINE OUT
IC4-1
Power Amplifier Circuit
IC4-2
Power Amplifier Circuit
SPR 6cm 13cm 16Ω
SPL 6cm 13cm 16Ω
CN3
HP
Headphones
SPR
SPL
PAR
PAL
SOR
SOL
CN2
CN1

MAIN MAIN CIRCUIT BOARD

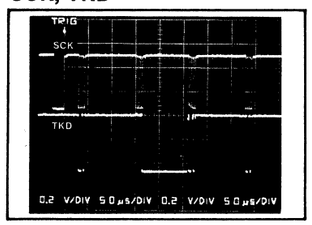
❶ $\overline{\text{RES}}$



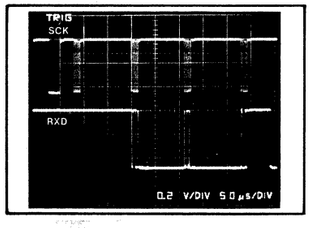
❷ MIDI OUT



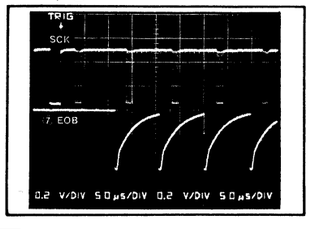
SCK, TKD



SCK, RXD



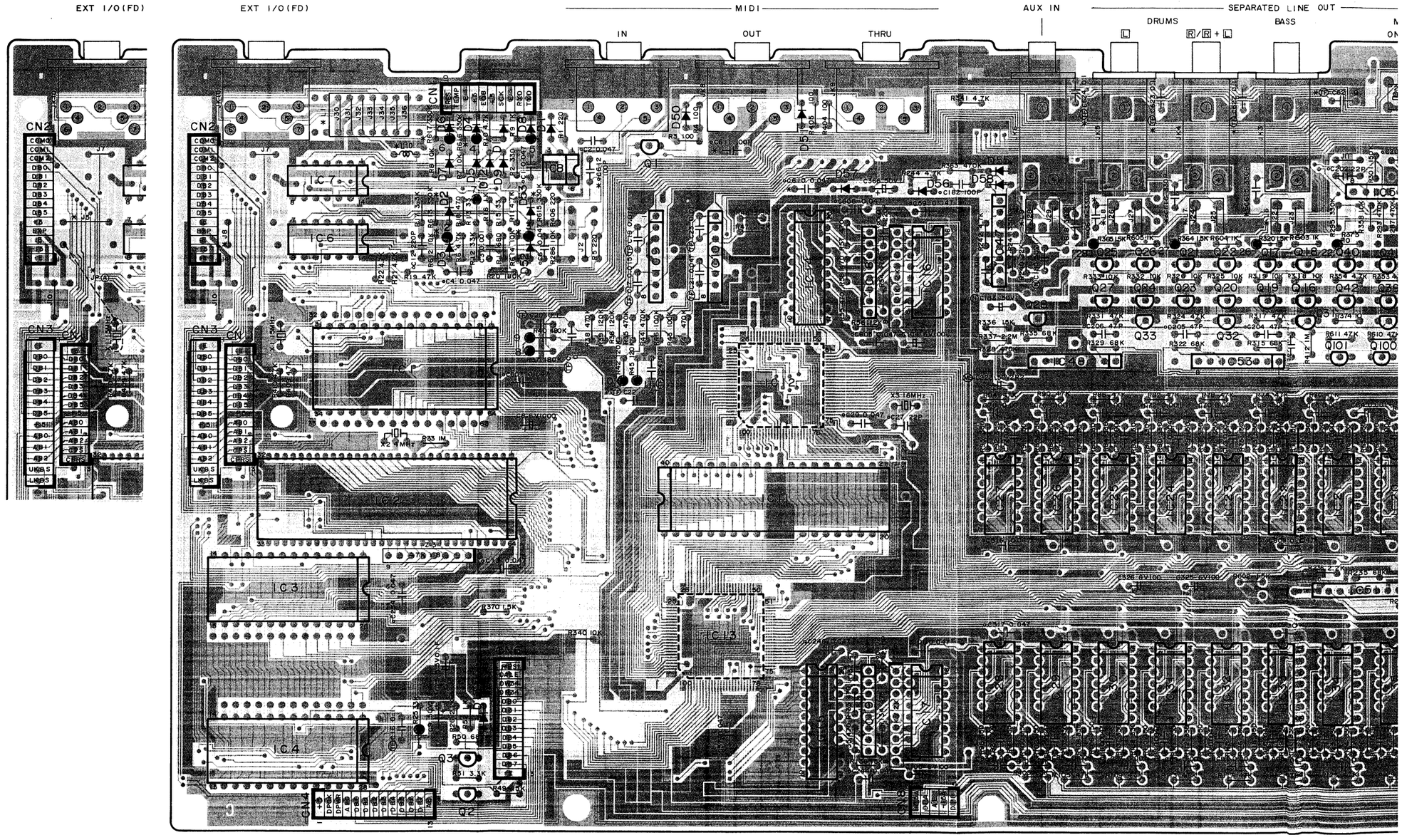
SCK, ❼ EOB



*** P.C.B. Comparison chart by area.**

Area	P.C.B. No.	L1	L4	L5	L6	L7	L8	L9	R612~617	C610~624	J5	J8	JP Ⓐ
EZ	SXPG136531	○	○	○	○	○	○	○	○	○	○	×	○
Others	SXPG136511	× (J30~J35)	× (J18, J19)	× (J20, J21)	× (J22, J23)	× (J24, J25)	× (J26, J27)	× (J28, J29)	×	×	×	○	×

Products for [EZ] area



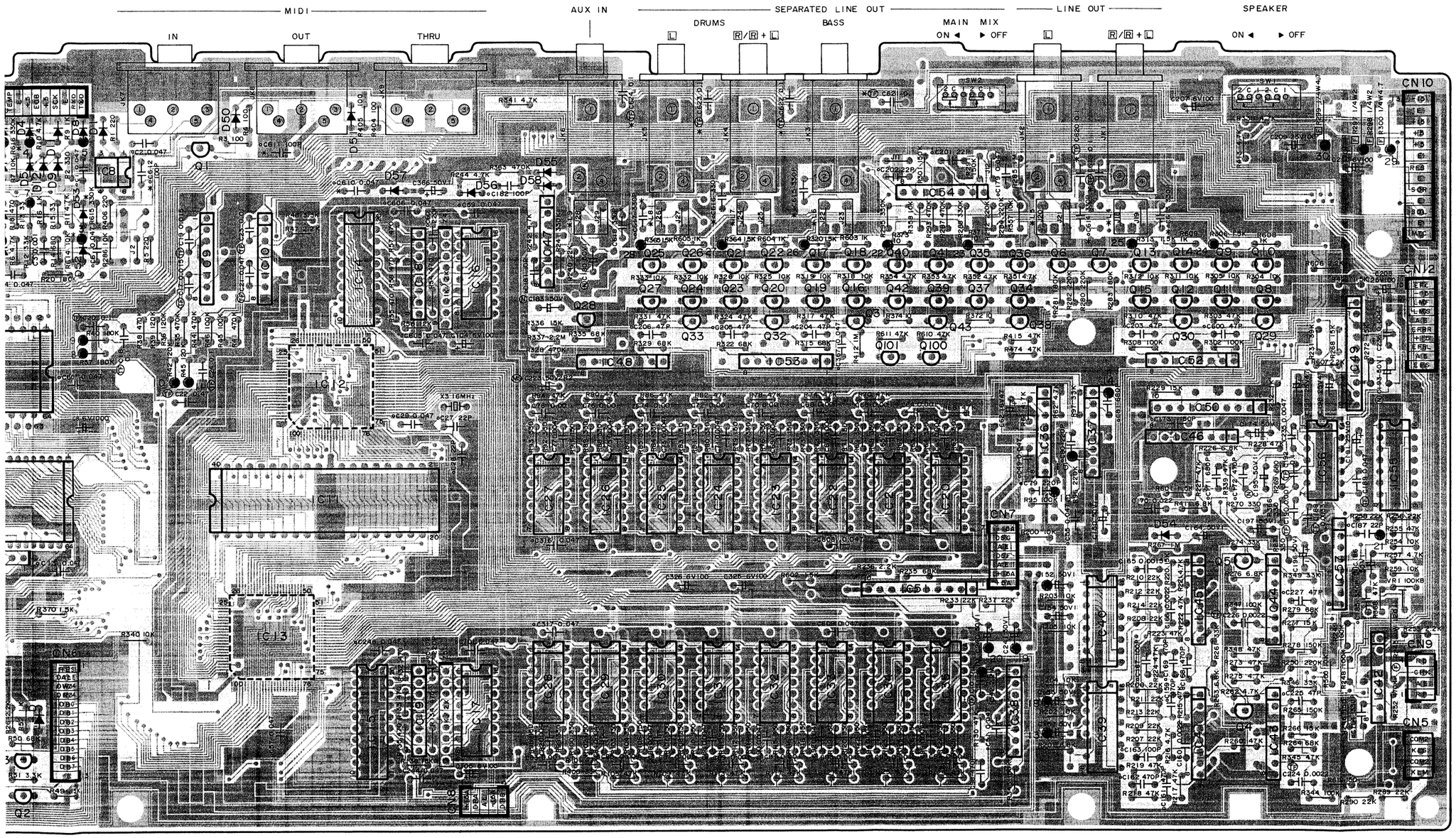
5 6 7 8 9 10 11 12 13 14

	L7	L8	L9	R612~617	C610~624	J5	J8	JP Ⓐ
	○	○	○	○	○	○	×	○
)23)	× (J24, J25)	× (J26, J27)	× (J28, J29)	×	×	×	○	×

Circuit view on top of P.C.B

Products for [EZ] area **SXPG136531**

other areas **SXPG136511**



NOTES:

- IC'S

IC1:	SVIG7810H
IC2:	SVIGM6050211
IC3:	SVIG05C300A0
IC4:	SVIGD446415L
IC6:	SVIGM74LS05
IC7:	SVIGM74LS07
IC8:	SVIGPC900
IC9, 10, 36~38, 41, 43~48, 52~54, 57:	SVIGM5218L
IC11:	SVIG2000C209
IC12, 13:	MN6635
IC14, 15:	SVIGBA9221
IC16, 17:	MN74HC4051
IC18, 19:	SVIGM5238L
IC20~35:	SVIGUPD4066B
IC39, 40:	SVIGTC4053BP
IC42:	SVIGM5216LL
IC49~51:	SVIGM5241L
IC55:	SVIGMSM4051R
IC56:	SVIGLM1894N

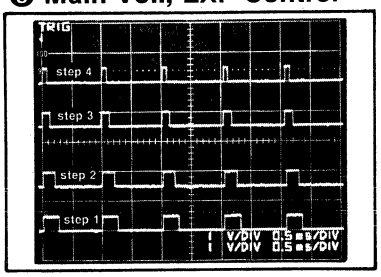
- TRANSISTORS

Q1, 3, 8, 11, 12, 15, 16, 19, 20, 23, 24, 27, 28, 34, 39:	2SA1015-GR
Q2, 9, 10, 13, 14, 17, 18, 21, 22, 25, 26, 36, 41:	2SC2320LFG
Q4~7, 100, 101:	2SJ40CD
Q29~33, 38, 43:	2SK381
Q35, 40:	2SC3940ARS
Q37, 42:	2SA1534ARS

- DIODES

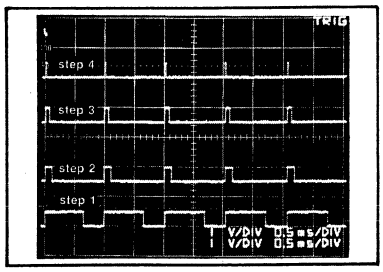
D1~9, 11~13, 50~58:	MA165TA5

❽ Main Vol., EXP Control



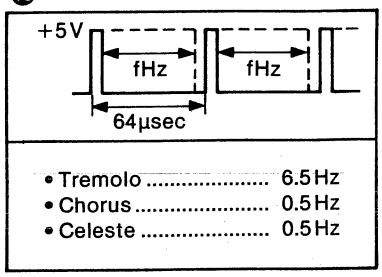
- EXP Pedal.....Max
- Main Volume.....Step 1~4
- Upper Key.....ON

❾ Rhythm Vol. Control



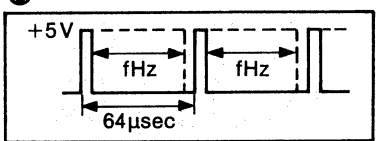
- EXP Pedal.....Max
- Main Volume.....Step 4
- Drums Volume.....Step 1~4
- Rhythm .....Start

❿



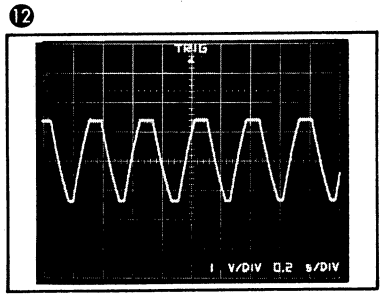
- Tremolo 6.5Hz
- Chorus 0.5Hz
- Celeste 0.5Hz

⓫



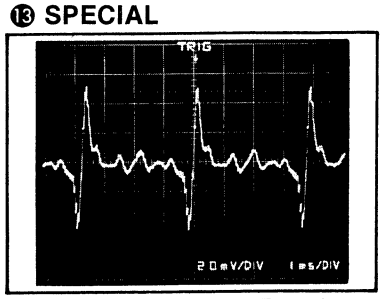
- Tremolo 20Hz
- Chorus 1Hz

⓬



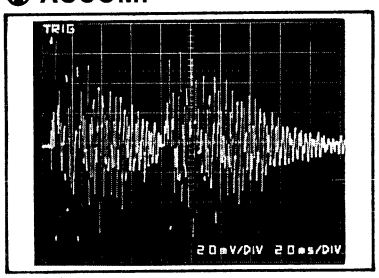
- U. Special .....Vibraphone

⓭ SPECIAL



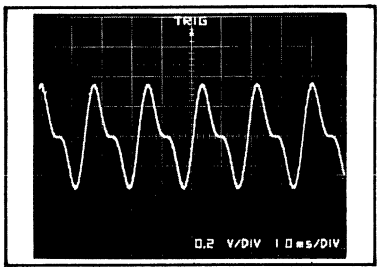
- U. Special .....Trumpet
- Special Vol.....Step 4
- Upper key C4

⓮ ACCOMP



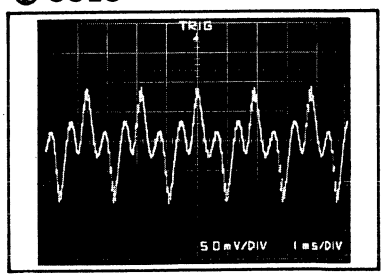
- Rhythm: Disco I • Tempo: ♩=180
- Play Mode: Fingered
- Accomp Pattern: I • Melodic: OFF
- Accomp Volume: Step 4
- Lower Key: C

⓯ BASS



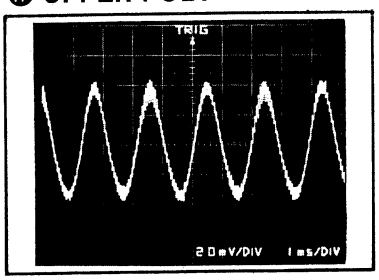
- Bass .....Bass 16'
- Bass Volume.....Step 4
- Pedal Key A1

⓰ SOLO



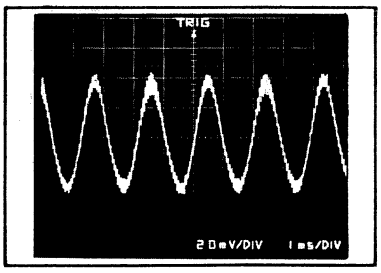
- Upper Solo .....Flute
- Solo Volume.....Step 4
- Upper Key.....C4

⓱ UPPER POLY



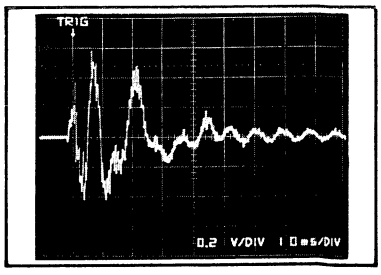
- Upper Poly.....Flute 8'
- U. Poly Volume.....Step 4
- Upper Key.....C4

⓲ LOWER POLY



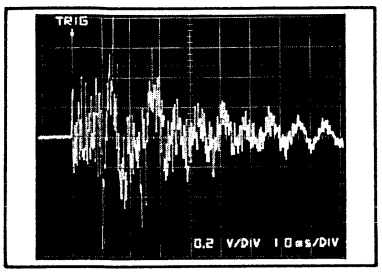
- Lower Poly .....Flute 8'
- L. Poly Volume .....Step 4
- Lower Key C4

⓳ Drum Percussion A



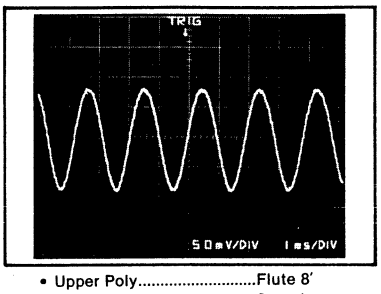
- Phythm .....Disco I
- Tempo..... ♩=300
- Drums Volume .....Step 4

⑳ Drum Percussion B



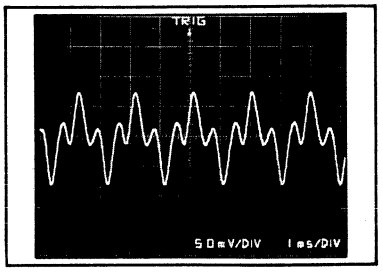
- Rhythm .....Disco I
- Tempo..... ♩=300
- Drums Volume.....Step 4

㉑ REVERB



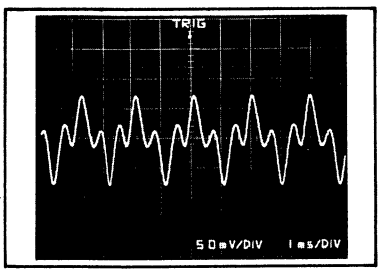
- Upper Poly.....Flute 8'
- U. Poly Volume.....Step 4
- Reverb Volume .....Step 4
- Effect...OFF • Upper Key...C4

㉒



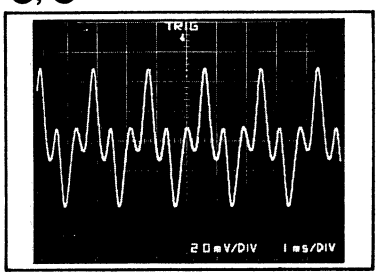
- Upper Solo .....Flute
- Solo Vol., Main Vol. .....Step 4
- EXP Pedal.....Max
- Effect...OFF • Upper Key...C4

㉓



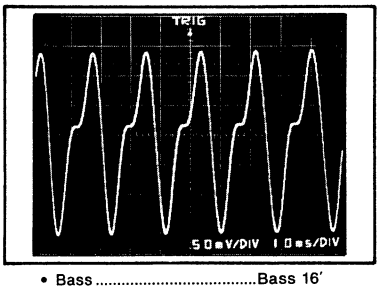
- Upper Solo .....Flute
- Solo Vol., Main Vol. .....Step 4
- EXP Pedal.....Max
- Effect...OFF • Upper Key...C4

㉔, ㉕



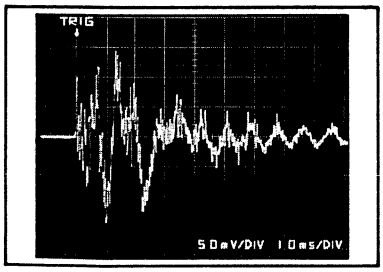
- Upper Solo .....Flute
- Solo Vol., Main Vol. .....Step 4
- EXP Pedal.....Max
- Effect...OFF • Upper Key...C4

㉖



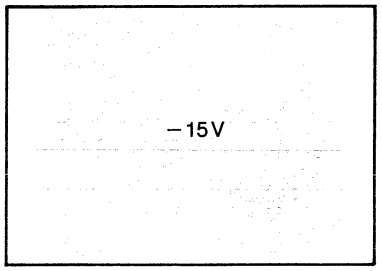
- Bass .....Bass 16'
- Bass Vol., Main Vol. .....Step 4
- EXP Pedal.....Max
- Pedal Key A1

㉗, ㉘



- Rhythm .....Disco I
- Tempo..... ♩=300
- Drums Vol., Main Vol. .....Step 4
- EXP Pedal.....Max

㉙



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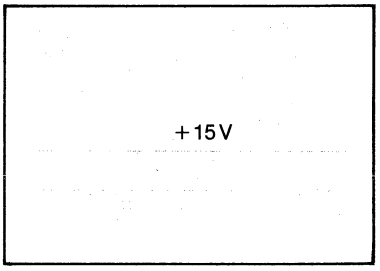

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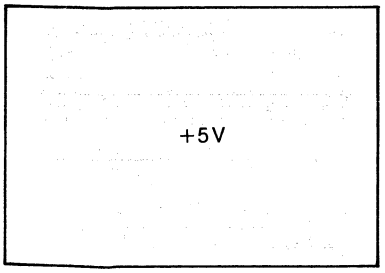


NOTES:

- IC'S

IC1:	SVIG7810H
IC2:	SVIGM6050211
IC3:	SVIG05C300A0
IC4:	SVIGD446415L
IC6:	SVIGM74LS05
IC7:	SVIGM74LS07
IC8:	SVIGPC900
IC9, 10, 36~38, 41, 43~48, 52~54, 57:	SVIGM5218L
IC11:	SVIG2000C209
IC12, 13:	MN6635
IC14, 15:	SVIGBA9221
IC16, 17:	MN74HC4051
IC18, 19:	SVIGM5238L
IC20~35:	SVIGUPD4066B
IC39, 40:	SVIGTC4053BP
IC42:	SVIGM5216LL
IC49~51:	SVIGM5241L
IC55:	SVIGMSM4051R
IC56:	SVIGLM1894N

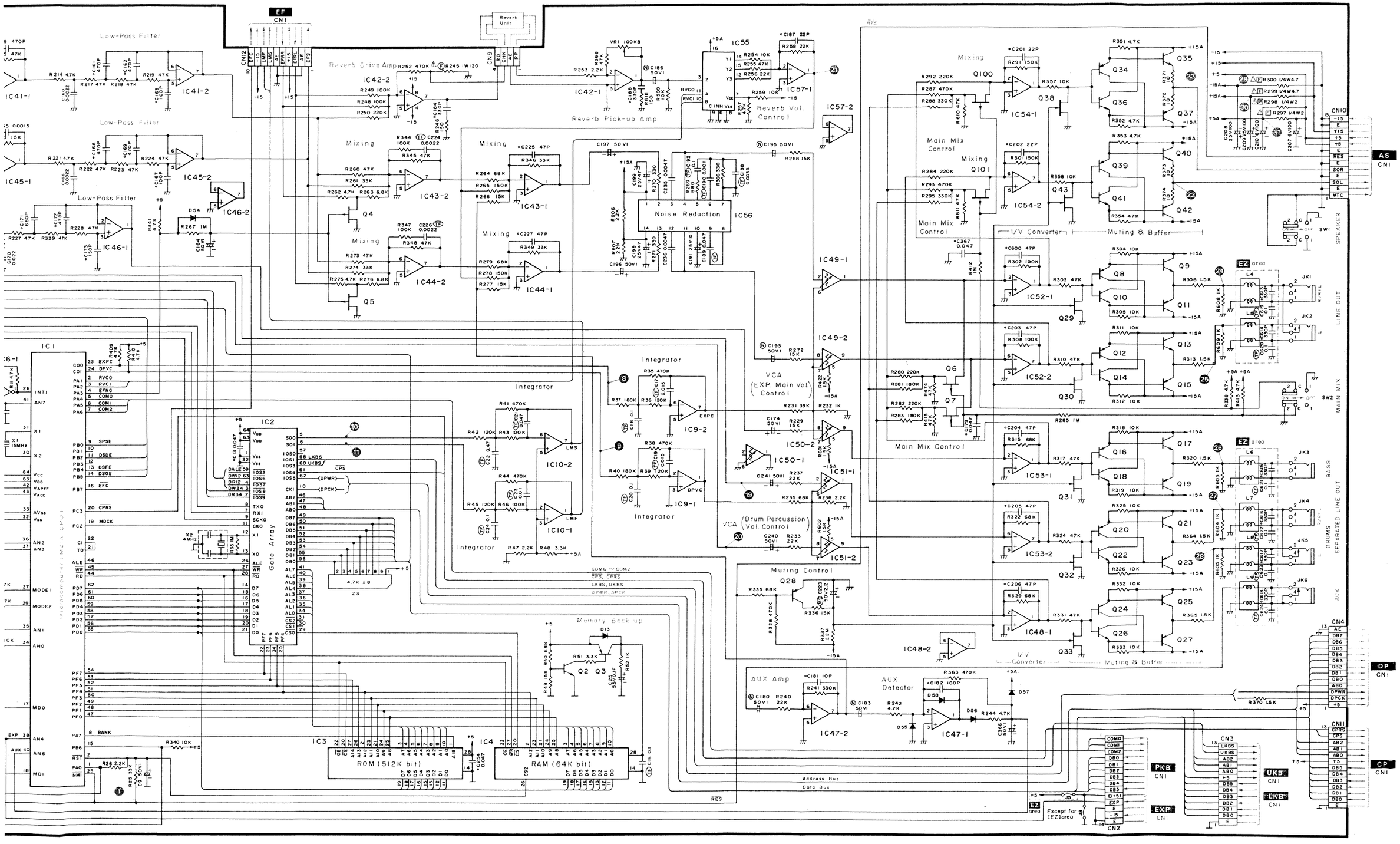
- TRANSISTORS

Q1, 3, 8, 11, 12, 15, 16, 19, 20, 23, 24, 27, 28, 34, 39:	2SA1015-GR
Q2, 9, 10, 13, 14, 17, 18, 21, 22, 25, 26, 36, 41:	2SC2320LFG
Q4~7, 100, 101:	2SJ40CD
Q29~33, 38, 43:	2SK381
Q35, 40:	2SC3940ARS
Q37, 42:	2SA1534ARS

- DIODES

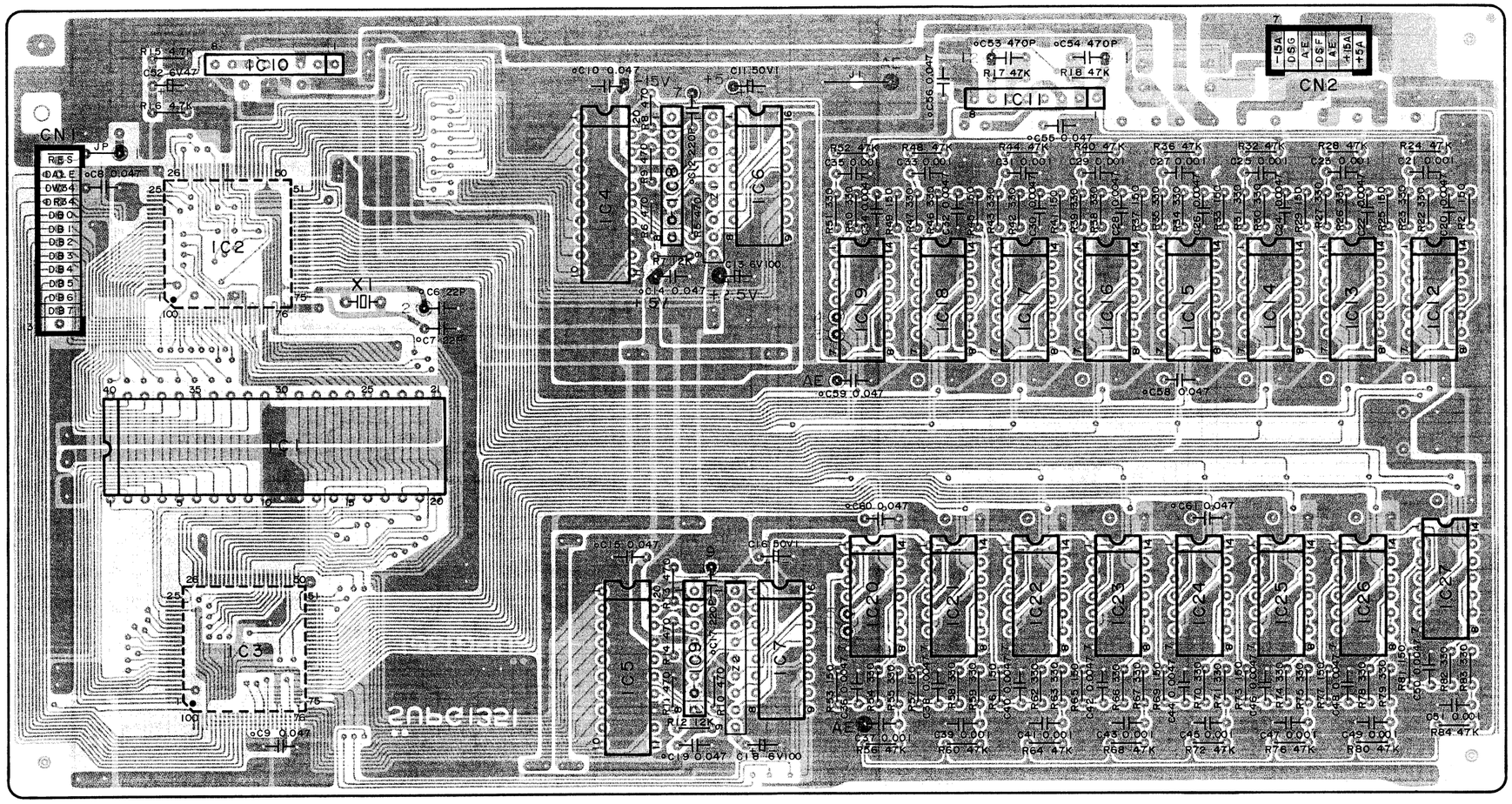
D1~9, 11~13, 50~58:	MA165TA5

MAIN CIRCUIT DIAGRAM


EF
CN1
Reverb Unit
Low-Pass Filter
IC41-1
IC41-2
IC45-1
IC45-2
IC46-1
IC46-2
Reverb Drive Amp
IC42-2
IC42-1
Reverb Pick-up Amp
IC55
IC57-1
Reverb Vol. Control
IC57-2
Mixing
IC43-2
IC43-1
IC44-2
IC44-1
Noise Reduction
IC56
IC49-1
IC49-2
VCA (EXP Main Vol) Control
Integrator
IC9-2
IC9-1
IC10-2
IC10-1
IC50-2
IC50-1
IC51-1
IC51-2
VCA (Drum Percussion) Vol Control
Muting Control
Main Mix Control
Mixing
Q100
Q101
IC54-1
IC54-2
I/V Converter
Muting & Buffer
IC52-1
IC52-2
IC53-1
IC53-2
IC48-1
IC48-2
AUX Amp
AUX Detector
IC47-2
IC47-1
Microcomputer (Main CPU)
IC1
IC2
Gate Array
IC3
ROM (512K bit)
IC4
RAM (64K bit)
Memory Back up
Address Bus
Data Bus
RES
SPEAKER
SW1
SW2
LINE OUT
MAIN MIX
BASS
DRUMS
SEPARATED LINE OUT
AUX
CNIO
CN4
CN3
CN11
CN2
DP CNI
CP CNI
PKB CNI
EXP CNI
UKB CNI
LKB CNI
AS CNI
EZ area
Except for EZ1area

Circuit view on top of P.C.B

SXPG135121

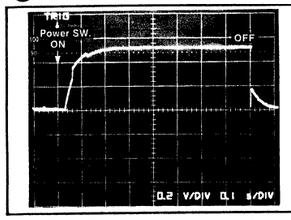


NOTES:

- IC'S

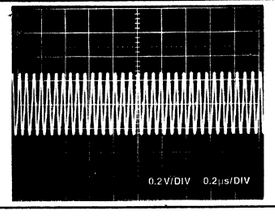
IC1:	SVIGC320C266
IC2, 3:	MN6635
IC4, 5:	SVIGBA9221
IC6, 7:	MN74HC4051
IC8, 9:	SVIGM5238L
IC10, 11:	SVIGM5218L
IC12~27:	SVIGUPD4066B

❶ RES1

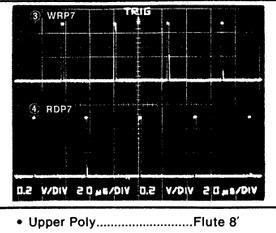


- Power SW. ..... ON → OFF

❷ 16MHz

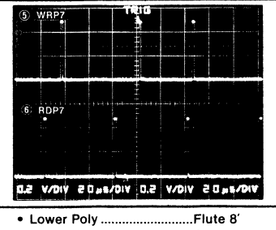


❸ WRP7, ❹ RDP7



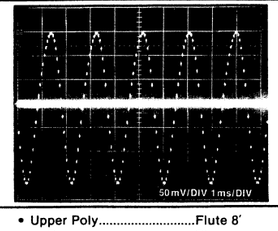
- Upper Poly ..... Flute 8'
- Upper Key C4

❺ WRP7, ❻ RDP7



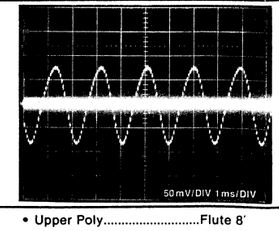
- Lower Poly ..... Flute 8'
- Lower Key C4

❼



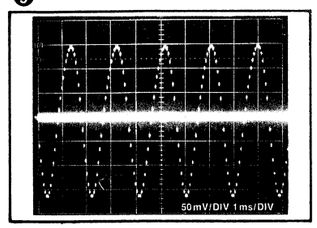
- Upper Poly ..... Flute 8'
- U. Poly Volume ..... Step 4
- Upper Key C4

❽



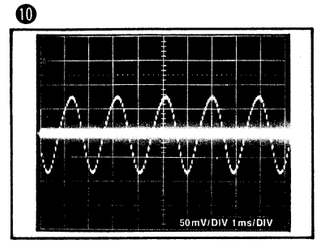
- Upper Poly ..... Flute 8'
- U. Poly Volume ..... Step 4
- Upper Key C4

❾



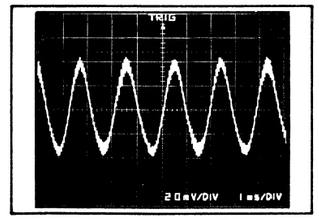
- Lower Poly ..... Flute 8'
- L. Poly Volume ..... Step 4
- Lower Key C4

❿



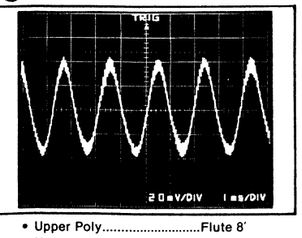
- Lower Poly ..... Flute 8'
- L. Poly Volume ..... Step 4
- Lower Key C4

⓫



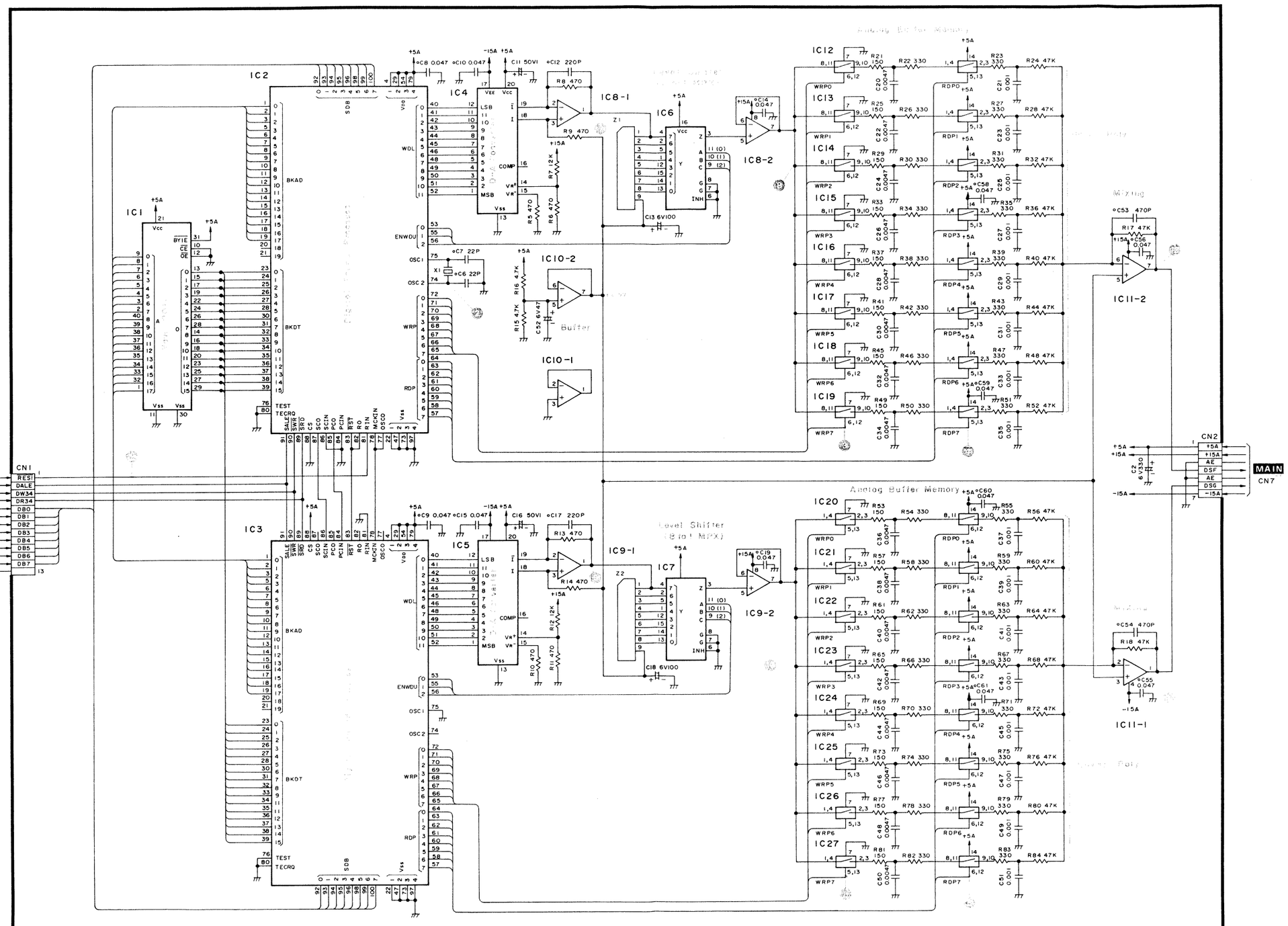
- Lower Poly ..... Flute 8'
- L. Poly Volume ..... Step 4
- Lower Key C4

⓬



- Upper Poly ..... Flute 8'
- U. Poly Volume ..... Step 4
- Upper Key C4

DIGITAL SOUND GENERATOR CIRCUIT DIAGRAM

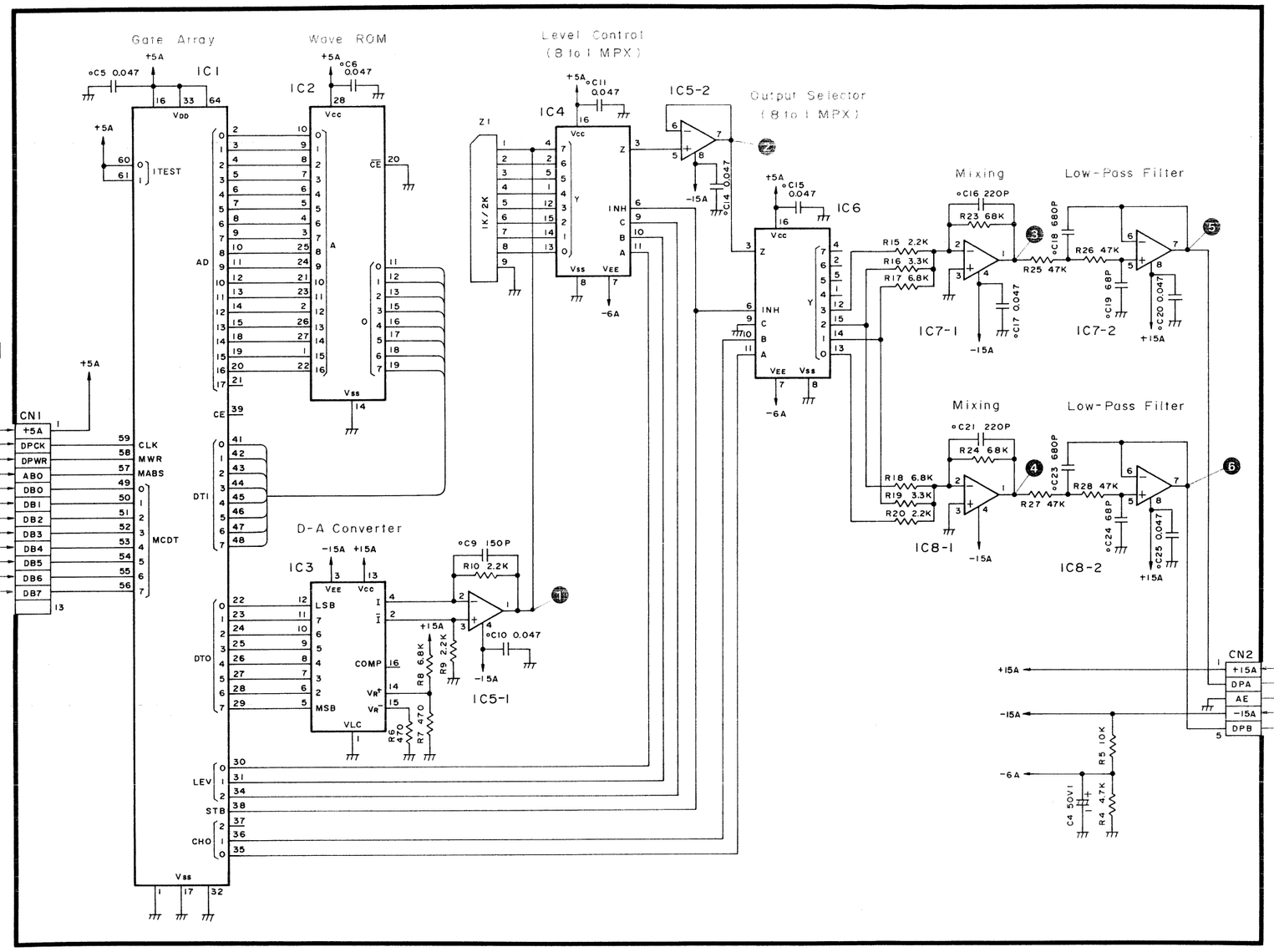


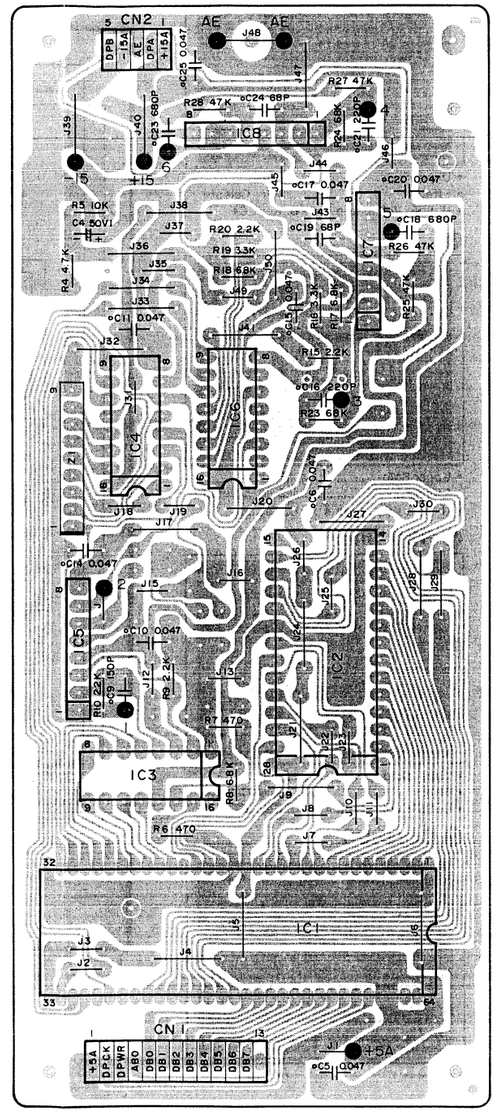
NOTES:

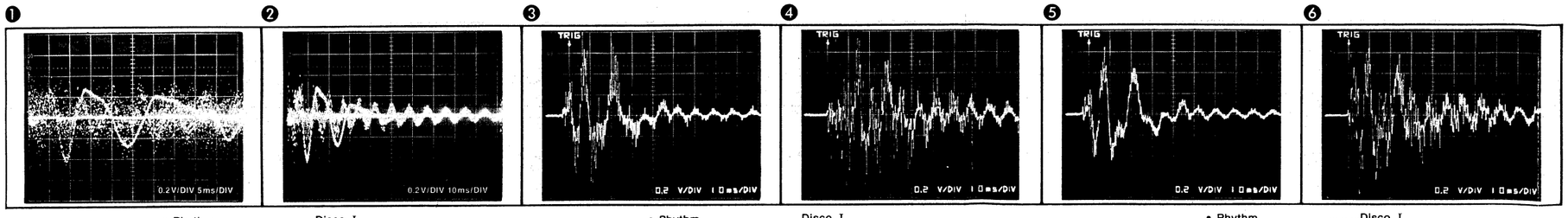
- IC'S
  - IC1: SVIGC32CC266
  - IC2, 3: MN6635
  - IC4, 5: SVIGBA92-1
  - IC6, 7: MN74HC4051
  - IC8, 9: SVIGM528L
  - IC10, 11: SVIGM528L
  - IC12~27: SVIGUPD0066B

DP DRUM PERCUSSION CIRCUIT DIAGRAM & CIRCUIT BOARD

SXPG135421







- Rhythm ..... Disco I
- Tempo ..... ♩=300
- Drums Volume ..... Step 4

- Rhythm ..... Disco I
- Tempo ..... ♩=300
- Drums Volume ..... Step 4

II-19

II-20

- Rhythm ..... Disco I
- Tempo ..... ♩=300
- Drums Volume ..... Step 4

NOTES:

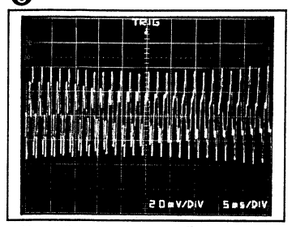
- IC'S

IC1:	MN50015PGQ
IC2:	MN231001PGW
IC3:	SVIGHA17008P
IC4, 6:	SVIGMSM4051R
IC5:	SVIGM5238L
IC7, 8:	SVIGM5218L

EF EFFECTOR CIRCUIT DIAGRAM & CIRCUIT BOARD

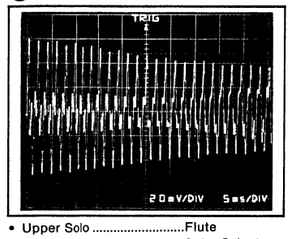
SXPG136611B

❸



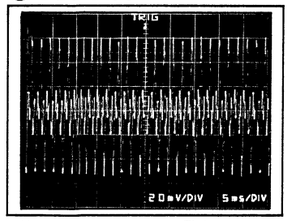
- Upper Solo .....Flute
- Effect .....Solo, Celeste
- U. Solo Vol. ...Step 4 • U. Key...C4

❹



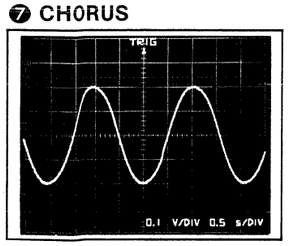
- Upper Solo .....Flute
- Effect .....Solo, Celeste
- U. Solo Vol. ...Step 4 • U. Key...C4

❻ BBD Bias

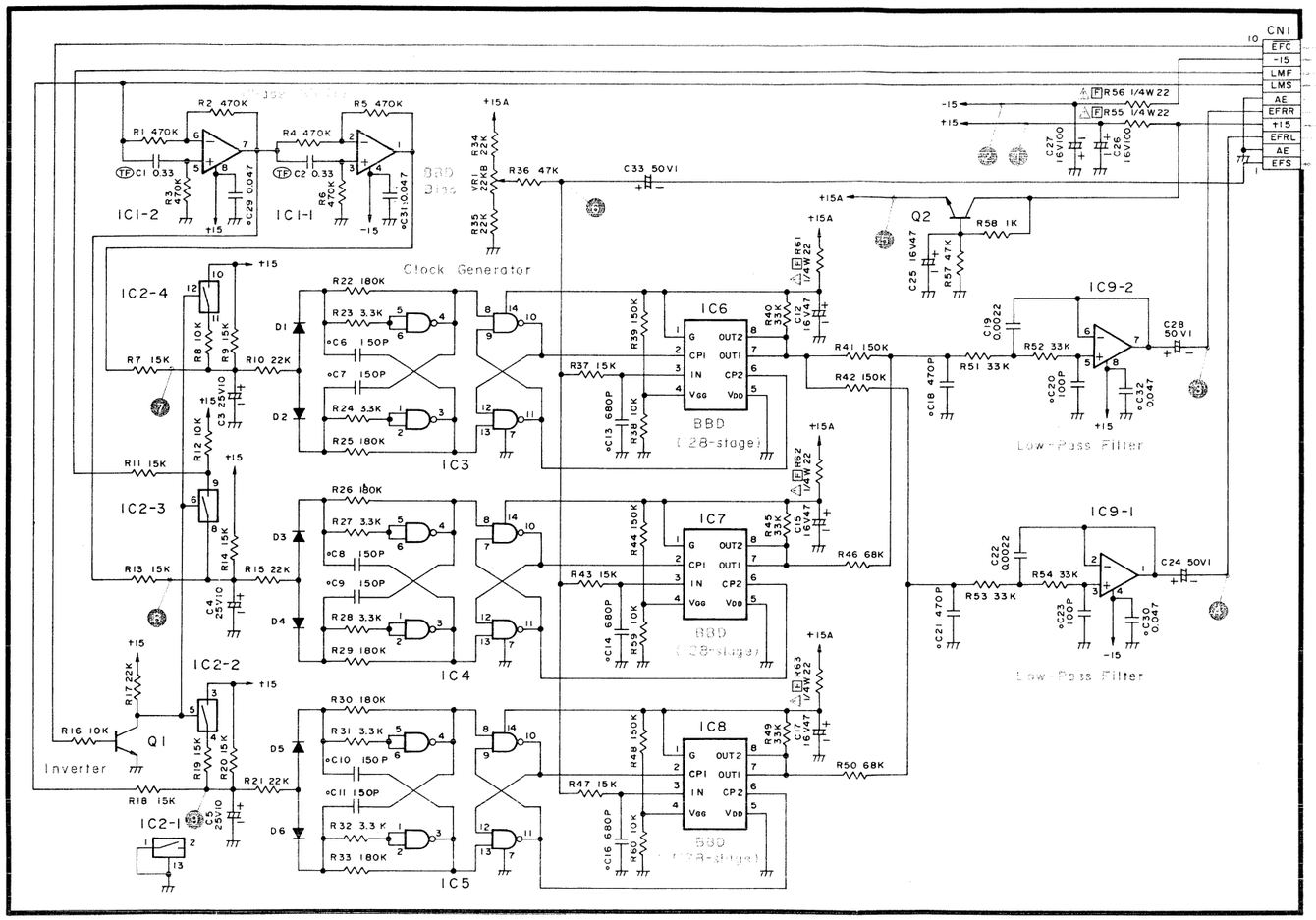


- Upper Solo .....Flute
- Effect .....Solo, Celeste
- U. Solo Vol. ...Step 4 • U. Key...C4

❼ CHORUS

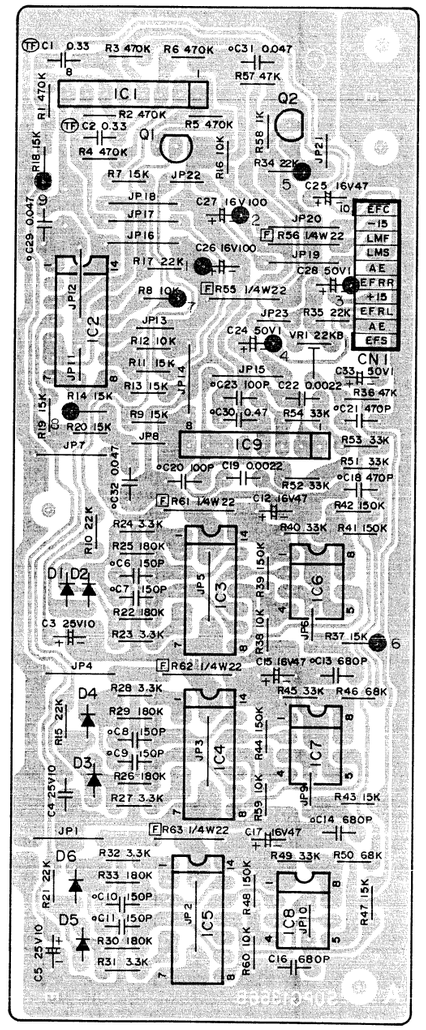


- Effect .....Chorus

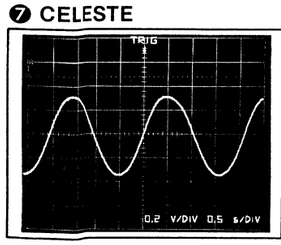


NOTES:

- IC'S
  - IC1, 9: SVIGM5218L
  - IC2: SVIGUPD4066B
  - IC3~5: SVIGMSM4011
  - IC6~8: MN3006
- TRANSISTORS
  - Q1, 2: 2SC2320LFG
- DIODES
  - D1~6: MA165TA5

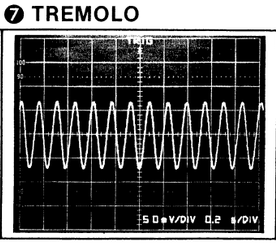


❼ CELESTE



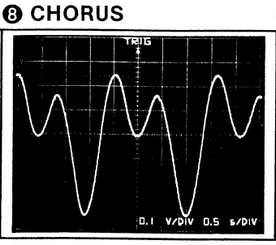
- Effect .....Celeste

❼ TREMOLO



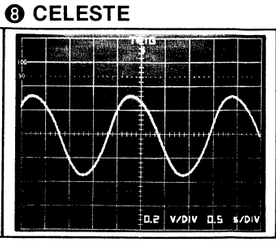
- Effect .....Tremolo

❽ CHORUS



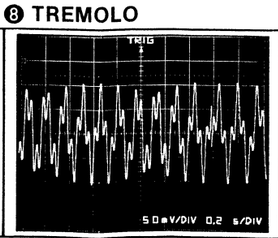
- Effect .....Chorus

❽ CELESTE



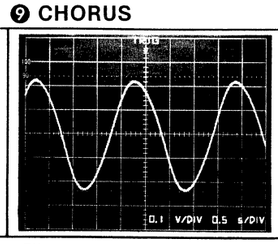
- Effect .....Celeste

❽ TREMOLO



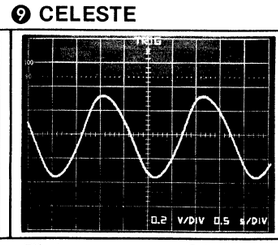
- Effect .....Tremolo

❾ CHORUS



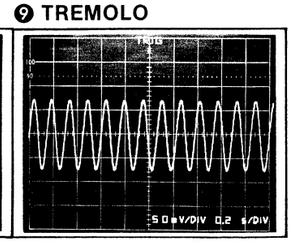
- Effect .....Chorus

❾ CELESTE



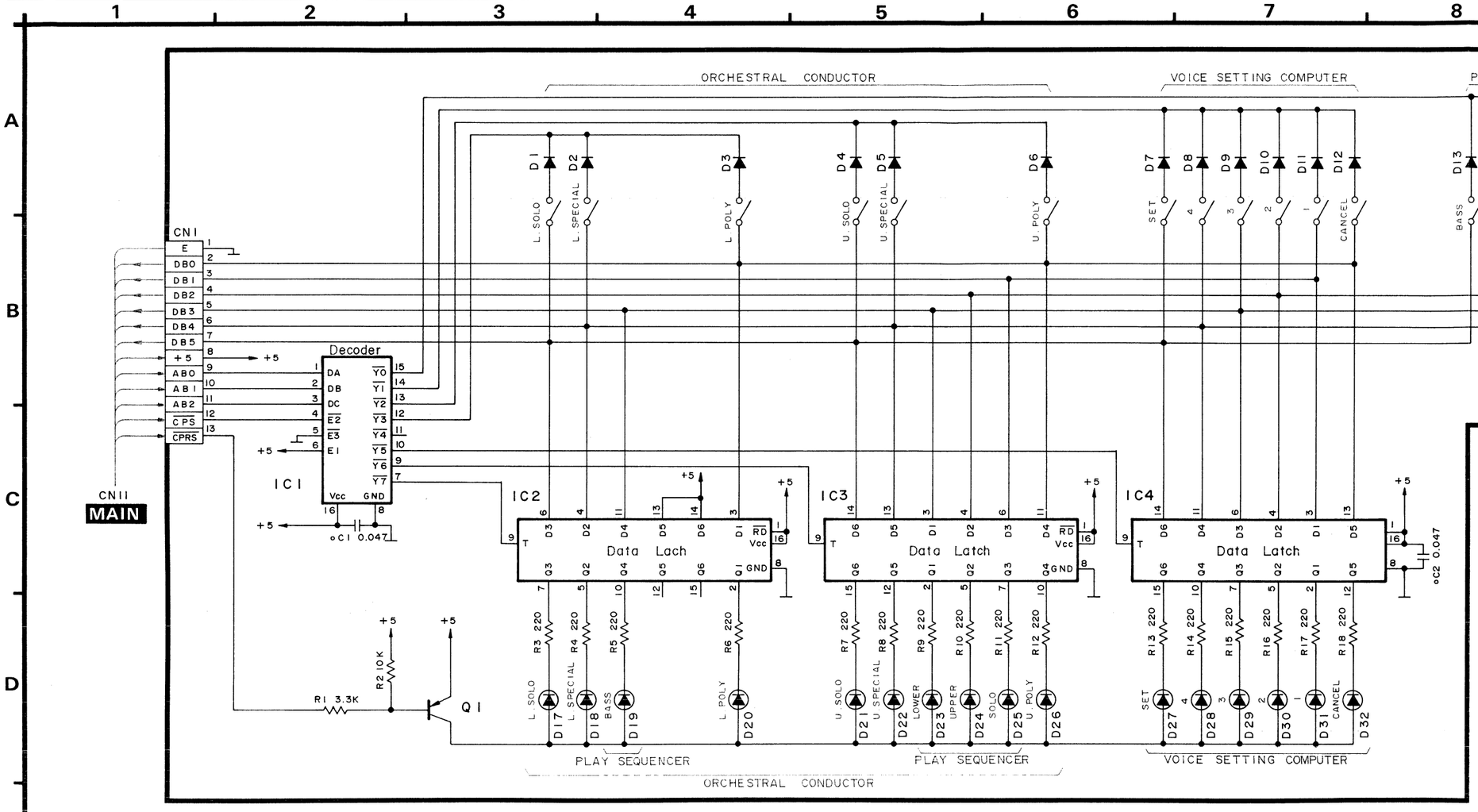
- Effect .....Celeste

❾ TREMOLO



- Effect .....Tremolo

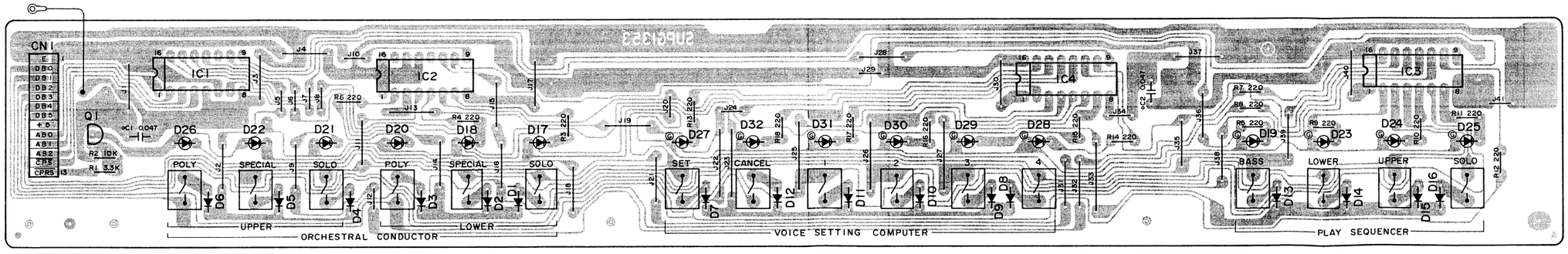
CP FRONT CONTROL PANEL CIRCUIT DIAGRAM & CIRCUIT BOARD



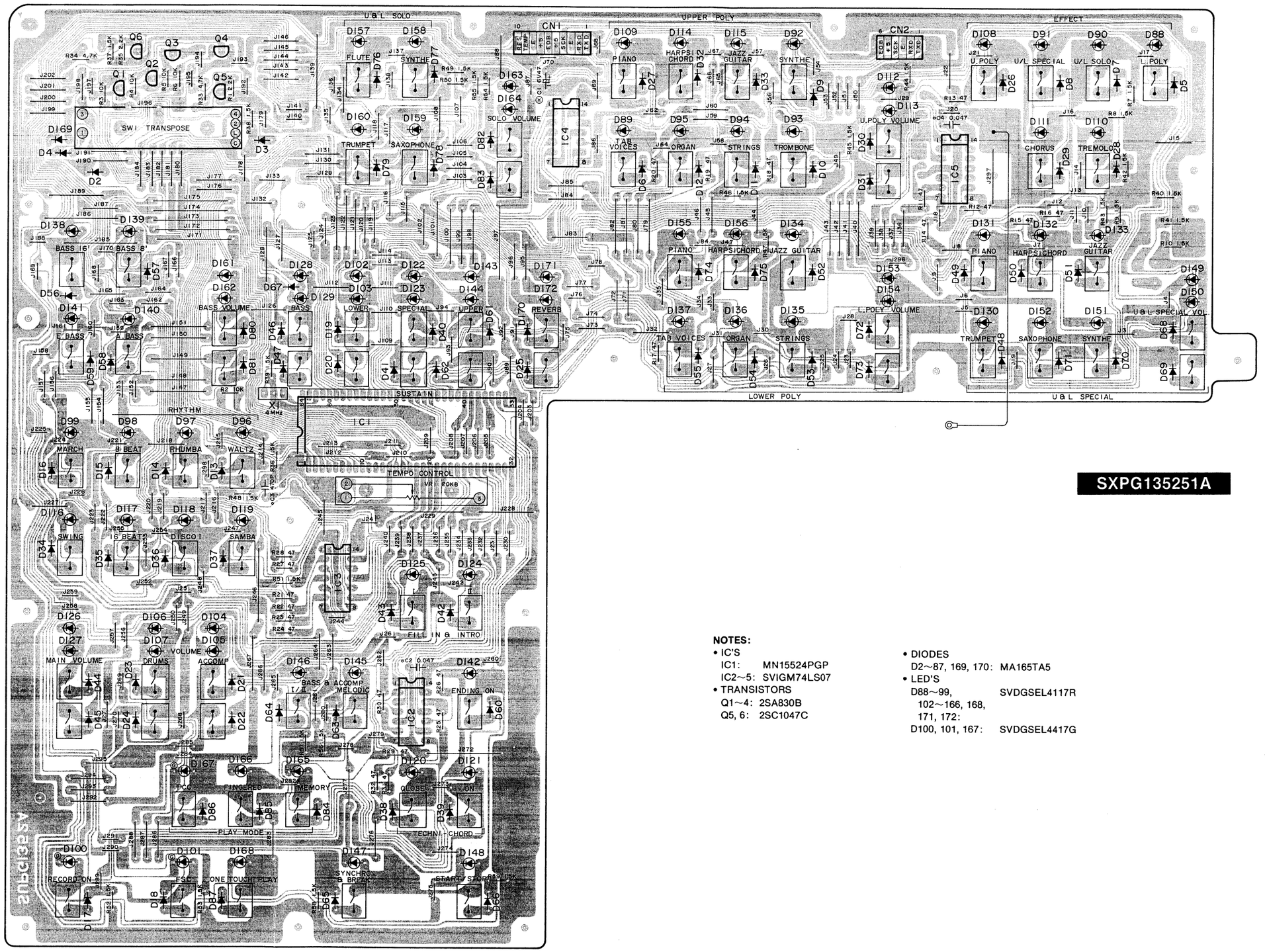
NOTES:

- IC'S
  - IC1: SVIG74LS138
  - IC2, 3, 4: SVIG74LS174
- TRANSISTOR
  - Q1: 2SA1015-GR
- DIODES
  - D1~16: MA165TA5
  - D17~18, 20~22, 26: SVDGSEL4117R
  - D19, 23~25, 27~32: SVDGSEL4417G

SXPG135321



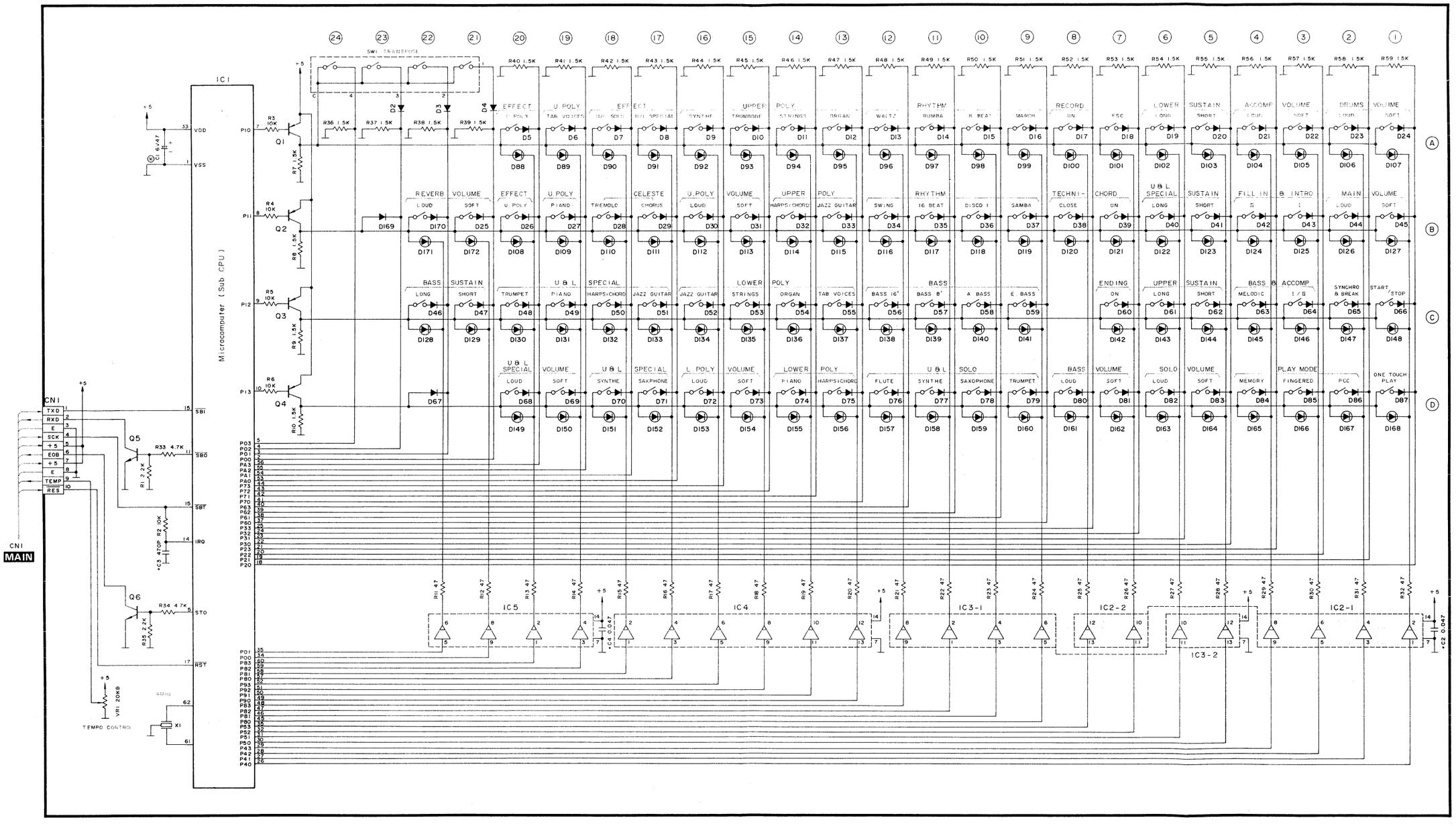
CPSL SIDE CONTROL PANEL CIRCUIT BOARD



NOTES:

- IC'S
  - IC1: MN15524PGP
  - IC2~5: SVIGM74LS07
- TRANSISTORS
  - Q1~4: 2SA830B
  - Q5, 6: 2SC1047C
- DIODES
  - D2~87, 169, 170: MA165TA5
- LED'S
  - D88~99, 102~166, 168, 171, 172: SVDGSEL4117R
  - D100, 101, 167: SVDGSEL4417G

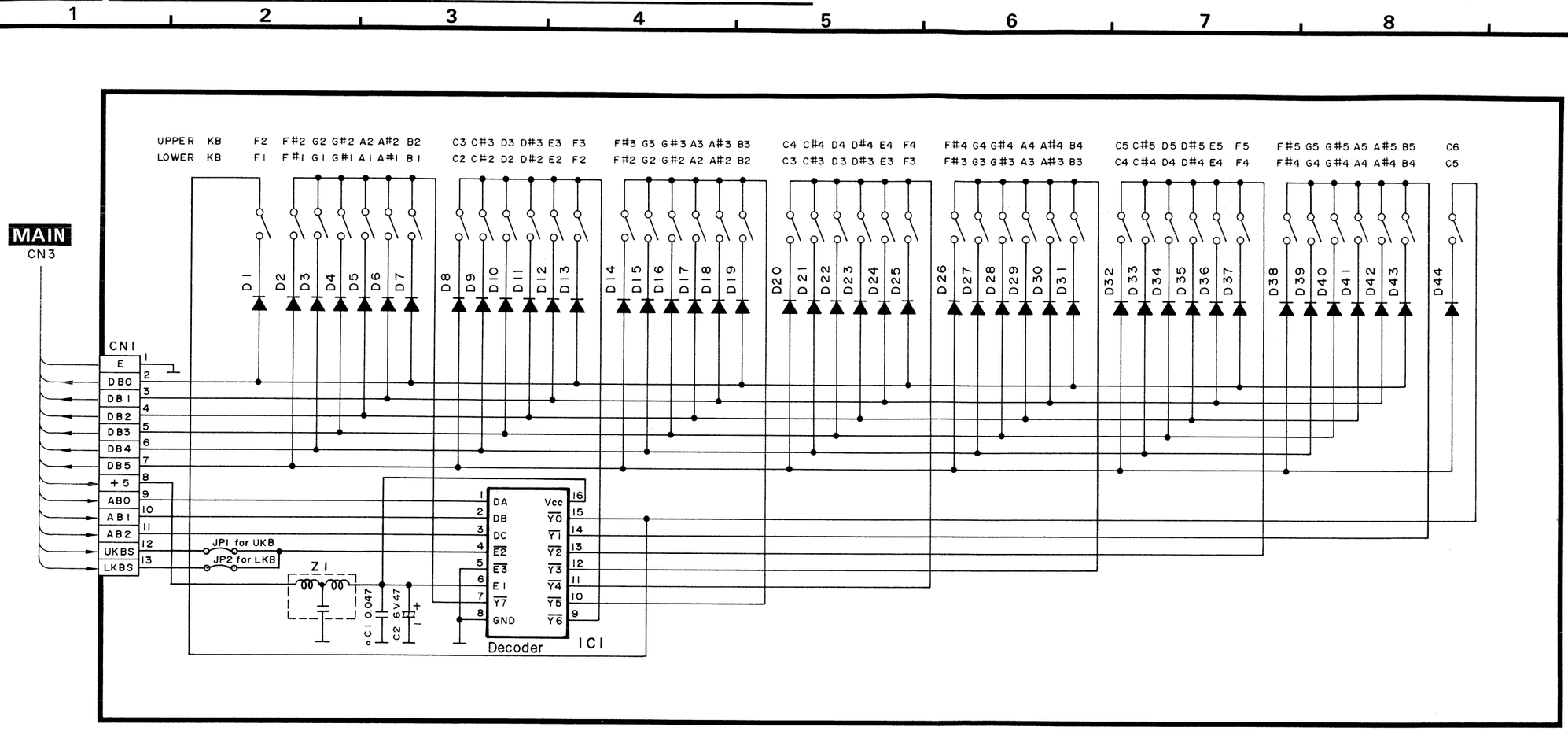
SIDE CONTROL PANEL CIRCUIT DIAGRAM



NOTES:

- IC'S
  - IC1: MN15524PGP
  - IC2~5: SVIGM74LS07
- TRANSISTORS
  - Q1~4: 2SA830B
  - Q5, 6: 2SC1047C
- DIODES
  - D2~87, 169, 170: MA165TA5
- LED'S
  - D88~99, 102~166, 168, 171, 172: SVDGSEL4117R
  - D100, 101, 167: SVDGSEL4417G

MKB MANUAL KEYBOARD CIRCUIT DIAGRAM

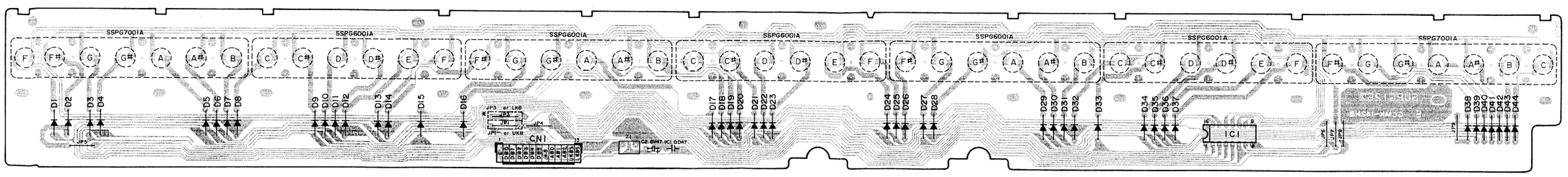

1 2 3 4 5 6 7 8 9
A B C D E F
UPPER KB F2 F#2 G2 G#2 A2 A#2 B2 C3 C#3 D3 D#3 E3 F3 F#3 G3 G#3 A3 A#3 B3 C4 C#4 D4 D#4 E4 F4 F#4 G4 G#4 A4 A#4 B4 C5 C#5 D5 D#5 E5 F5 F#5 G5 G#5 A5 A#5 B5 C6
LOWER KB F1 F#1 G1 G#1 A1 A#1 B1 C2 C#2 D2 D#2 E2 F2 F#2 G2 G#2 A2 A#2 B2 C3 C#3 D3 D#3 E3 F3 F#3 G3 G#3 A3 A#3 B3 C4 C#4 D4 D#4 E4 F4 F#4 G4 G#4 A4 A#4 B4 C5 C#5 D5 D#5 E5 F5 F#5 G5 G#5 A5 A#5 B5 C6
D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 D24 D25 D26 D27 D28 D29 D30 D31 D32 D33 D34 D35 D36 D37 D38 D39 D40 D41 D42 D43 D44
MAIN
CN3
CN1
E
DB0
DB1
DB2
DB3
DB4
DB5
+5
AB0
AB1
AB2
UKBS
LKBS
JP1 for UKB
JP2 for LKB
Z1
C1 0.047
C2 6V47
DA
DB
DC
E2
E3
E1
Y7
GND
Vcc
Y0
Y1
Y2
Y3
Y4
Y5
Y6
Decoder
IC1

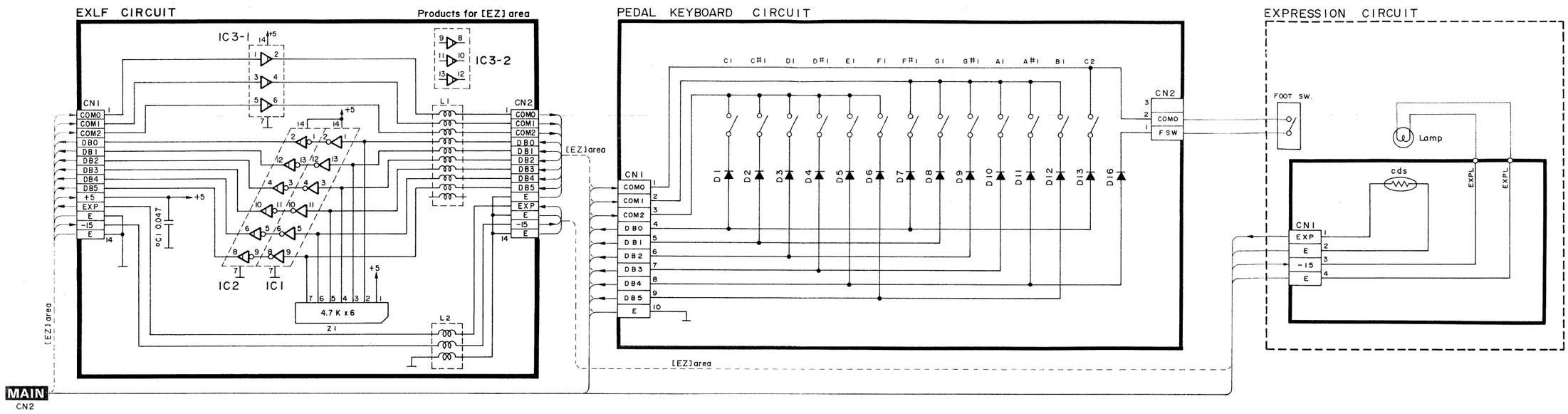
NOTES:
- IC
  IC1: SVIGM74LS138
- DIODES
  D1~44: MA165TA5

MKB MANUAL KEYBOARD CIRCUIT BOARD

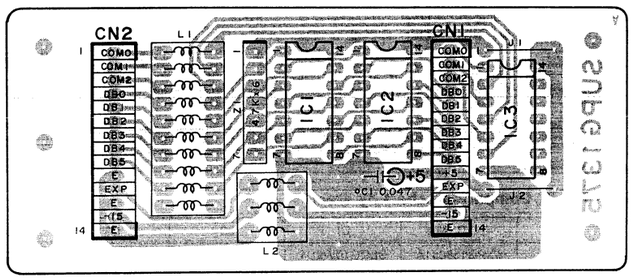
＊MKB 1: Upper Manual Keyboard **SXPG126711**

＊MKB 2: Lower Manual Keyboard **SXPG126721**





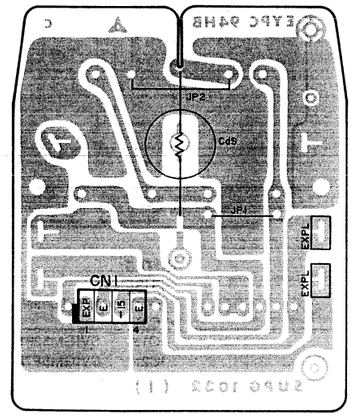
EXLF P.C.B. Products for [EZ] area **SXPG137511**



NOTES:
- IC'S
  IC1: SVIGTC4069BP
  IC2: SVIGM74LS05
  IC3: SVIGM74LS07

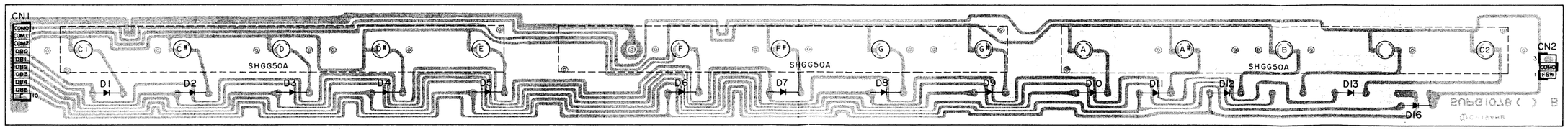
NOTES:
- DIODES
  D1~13, 16: MA162A

EXP P.C.B. **SXPG103211**



PKB PEDAL KEYBOARD CIRCUIT BOARD

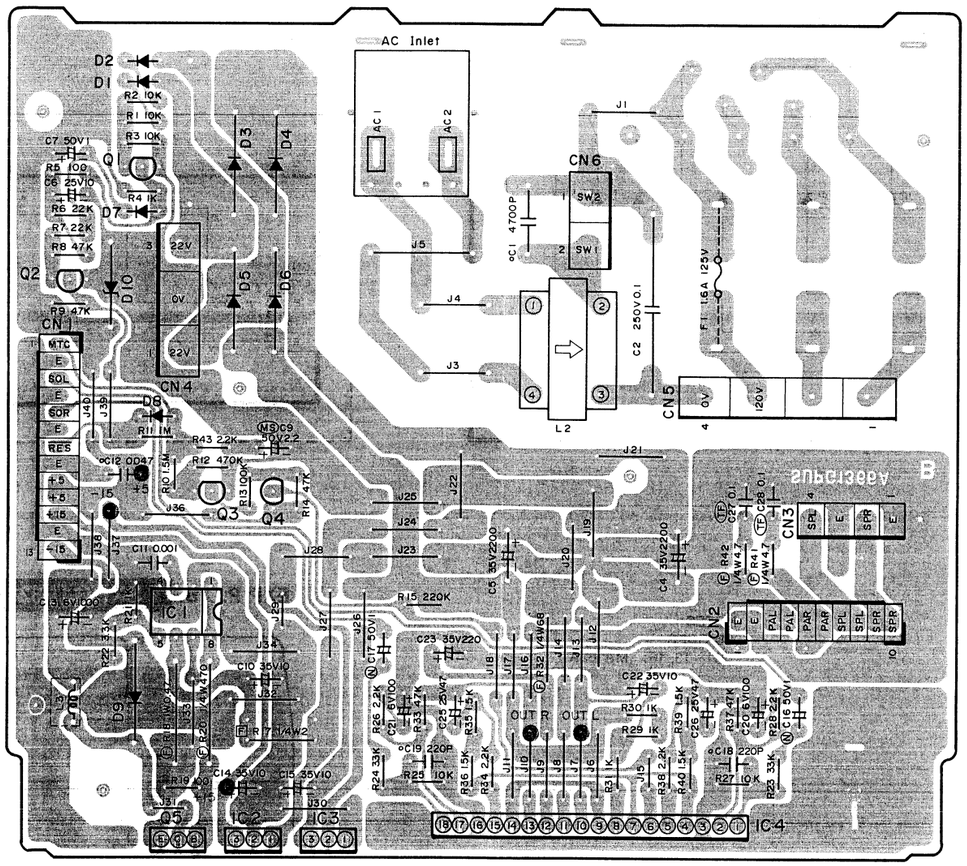
SXPG107851



AS AMP & POWER SUPPLY CIRCUIT BOARD

Products for [M] and [MC] areas

SXPG136631A



Products for [EZ] area

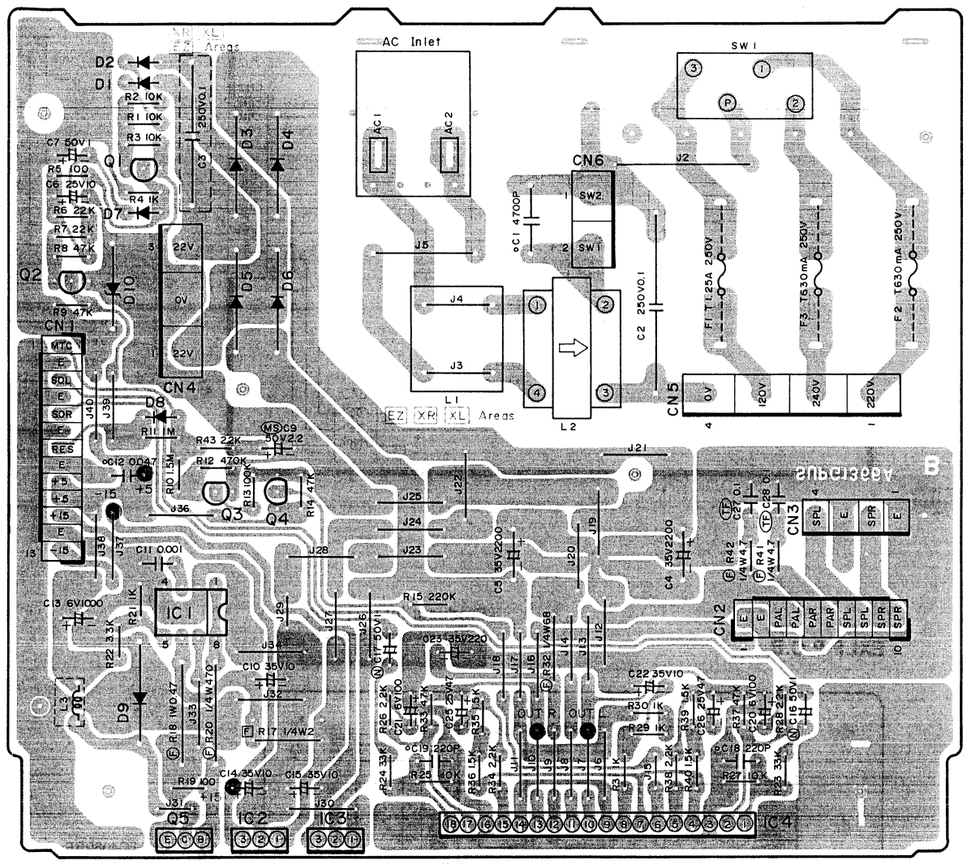
SXPG136641A

Products for [XL] and [XR] areas

SXPG136651A

other areas

SXPG136611A



NOTES:

- FUSE
  - F1: XBA1C12NU100
- IC'S
  - IC1: SVIGM5291P
  - IC2: SVIGM5F7815
  - IC3: SVIGM5F7915
  - IC4: SVIGS4132M2M
- TRANSISTORS
  - Q1~3: 2SC2320LFG
  - Q4: 2SA1015-GR
  - Q5: 2SB953AQP
- DIODES
  - D1, 2: SVDGERA1502Y
  - D3~6: SVDS2V20
  - D7, 8: MA165TA5
  - D9: SVDGRK14
  - D10: MA2062LF

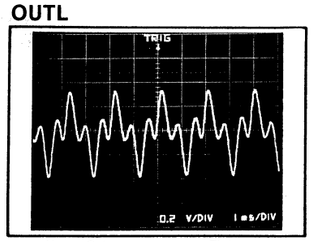
NOTES:

- FUSES
  - F1 XBA2C12TB0
  - F2, 3 XBA2C063TB0

*** P.C.B. Comparison chart by area.**

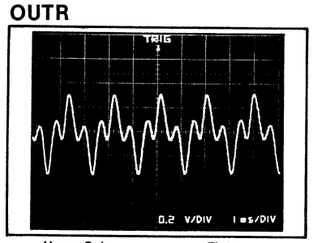
Area	P.C.B. No.	L1	L3	C3	AC Inlet Cover
EZ	SXPG136641A	SLQG10W2D1	SLCGR8121D	○	SJS9231A
XR, XL	SXPG136651A	SLQG10W2D1	SLCGR8121D	○	SJS9334A
Others	SXPG136611A	× (J3, J4)	SLCG1A121T	×	SJS9231A

OUTL



- Upper Solo .....Flute
- Solo Vol., Main Vol. .....Step 4
- EXP Pedal.....Max
- Effect...OFF • Upper key...C4

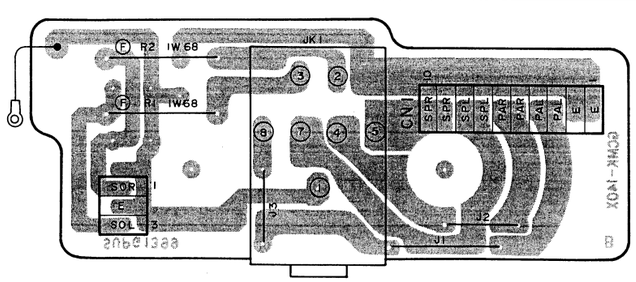
OUTR



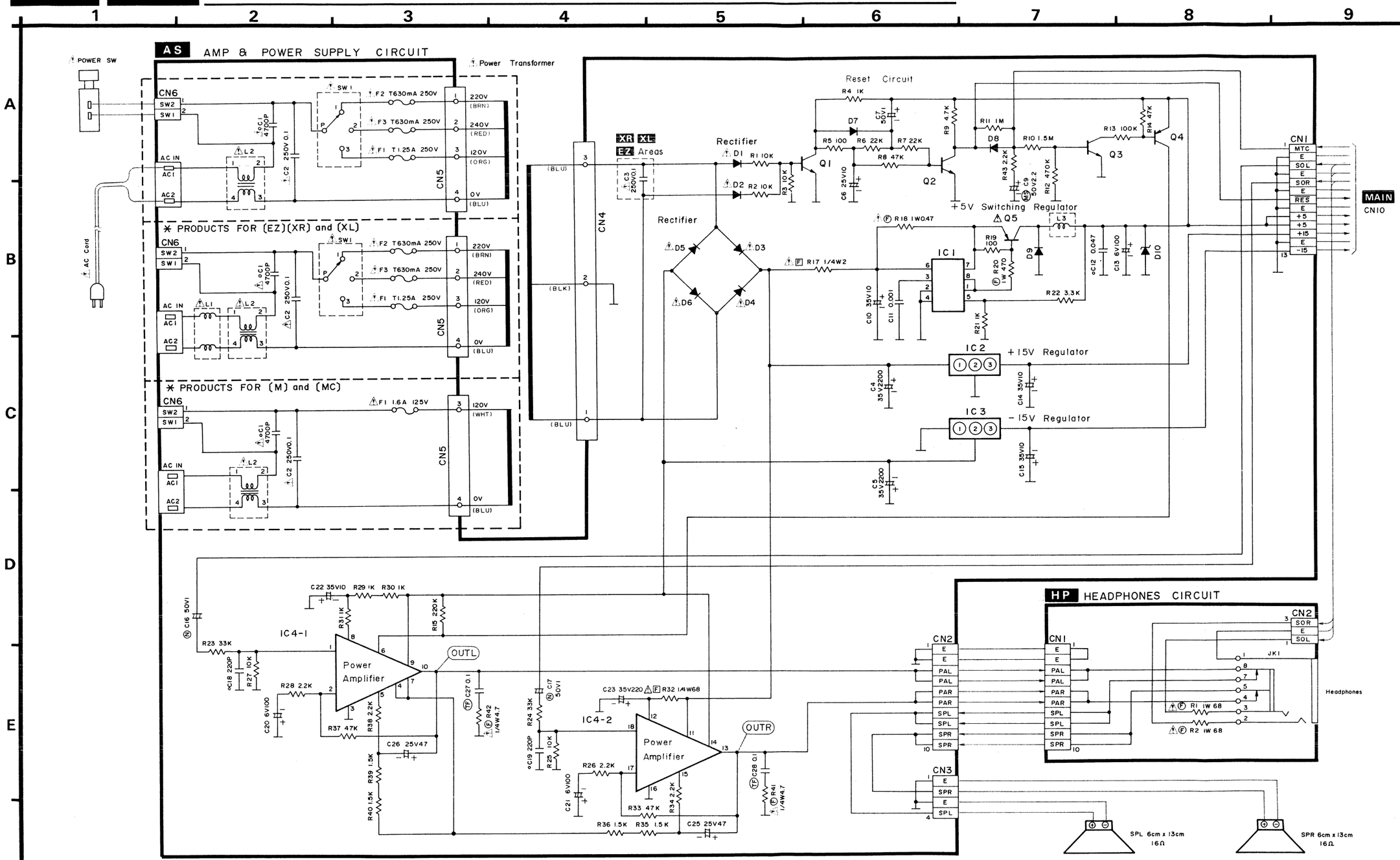
- Upper Solo .....Flute
- Solo Vol., Main Vol. .....Step 4
- EXP Pedal.....Max
- Effect...OFF • Upper key...C4

HP HEADPHONES CIRCUIT BOARD

SXPG139911



AS HP AMP & POWER SUPPLY, HEADPHONES CIRCUIT DIAGRAM



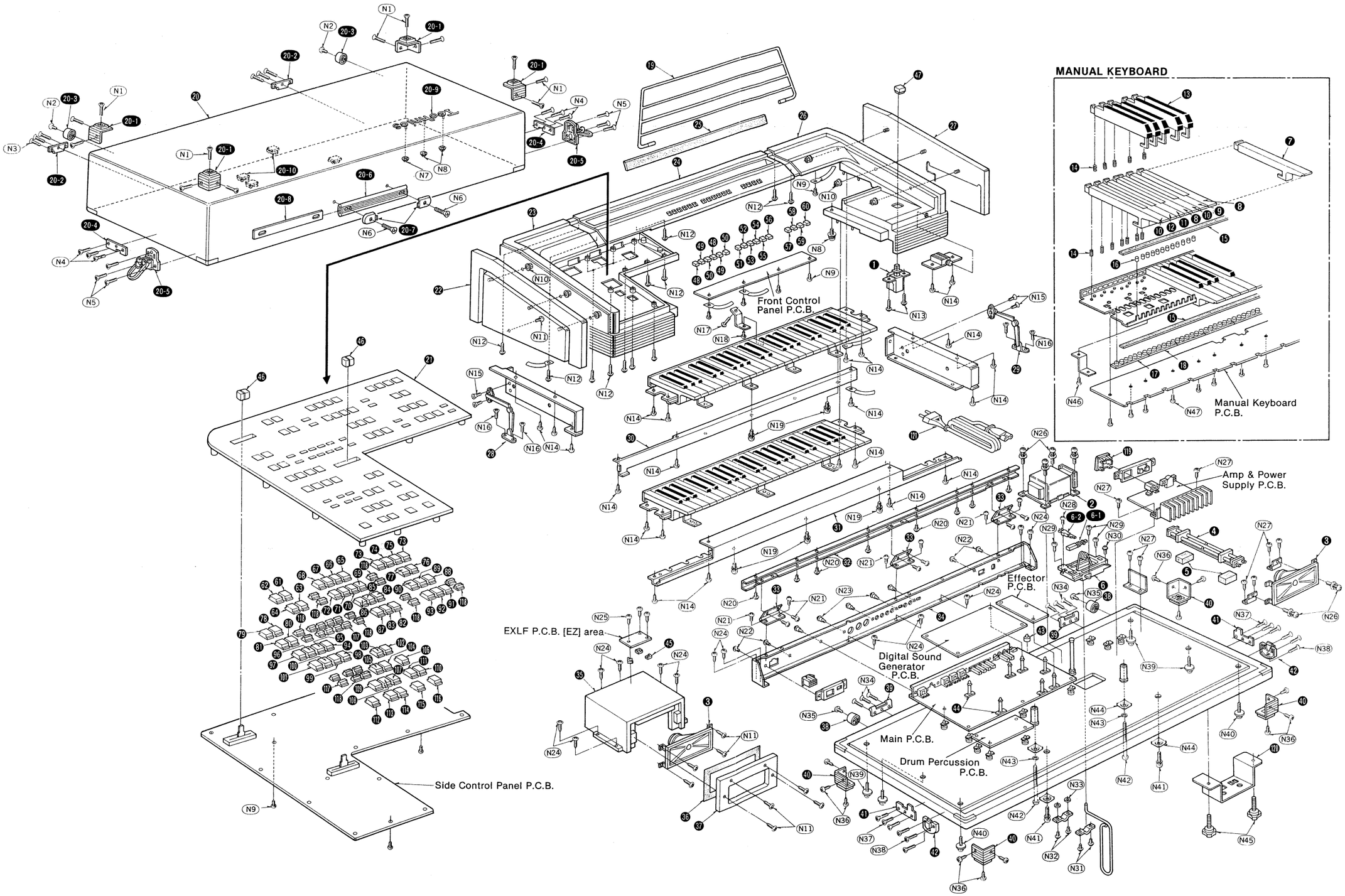
NOTES:

- IC'S
  - IC1: SVIGM5291P
  - IC2: SVIGM5F7815
  - IC3: SVIGM5F7915
  - IC4: SVIGS4132M2M
- TRANSISTORS
  - Q1~3: 2SC2320LFG
  - Q4: 2SA1015-GR
  - Q5: 2SB953AQP
- DIODES
  - D1, 2: SVDGERA1502Y
  - D3~6: SVDS2V20
  - D7, 8: MA165TA5
  - D9: SVDGRK14
  - D10: MA2062LF

*** P.C.B. Comparison chart by area.**

Area	P.C.B. No.	L1	L3	C3	F1	F2	F3	AC Inlet Cover
M, MC	SXPG136631A	× (J3, J4)	SLCG1A121T	×	1.6A, 125V	×	×	SJS9231A
EZ	SXPG136641A	SLQG10W2D1	SLCGR8121D	○	T1.25A, 250V	T630mA, 250V	T630mA, 250V	
XR, XL	SXPG136651A	SLQG10W2D1	SLCGR8121D	○				SJS9334A
Others	SXPG136611A	× (J3, J4)	SLCG1A121J	×				SJS9231A

EXPLODED VIEWS OF CABINET



REPLACEMENT PARTS LIST.....Cabinet and Chassis Parts

Notes:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. ○ mark are new parts.
3. For part No. with area mark, check the area when placing an order.

■ Upper Unit

Ref. No.		Part No.	Description	Per/Set
		POWER SWITCH		
	1 ⚠	ESB8213V	Power Switch	1
		TRANSFORMERS		
○	2 M MC ⚠	SLTG5M37	Power Transformer, [M] and [MC] areas	1
○	2 ⚠	SLTG5M36	Power Transformer	1
		SPEAKERS		
○	3	EAS15S06A	6cm×13cm, 16Ω	2
		REVERB UNIT		
	4	SJUG25005N	Reverberation Unit	1
	5	SHRG550	Cushion	2
		KNEE LEVER UNIT		
○	6	SXVG3031B	Knee Lever Unit	1
	6-1	SSHG1020A	Push Switch	1
	6-2	SSLG1005A	Leaf Switch	1
		MANUAL KEYBOARD		
	7	STBG1150A	White Key (Top Octave C Key)	1×2
	8	STBG1120A	White Key (B & E Key)	7×2
	9	STBG1110A	White Key (D Key)	3×2
	10	STBG1100A	White Key (C & F Key)	7×2
	11	STBG1140A	White Key (A Key)	4×2
	12	STBG1130A	White Key (G Key)	4×2
	13	STBG2070A	Black Key	18×2
	14	SUSG270A	Spring	44×2
	15	SHSG1931A	Felt	2×2
	16	SHGG9050A	Key Guide Rubber	44×2
	17	SSPG7001A	Rubber Switch (7 continuous)	2×2
	18	SSPG6001A	Rubber Switch (6 continuous)	5×2
		MUSIC RACK		
	19	SKGG2J10A	Music Rack	1

Ref. No.		Part No.	Description	Per/Set
		CABINET CASE		
○	20	SKZG8390A	Cabinet Case Ass'y	1
	20-1	SHRG7250A	Corner Cushion	4
	20-2	SBHG130A	Hinge	2
	20-3	SHRG2210A	Foot	2
	20-4	SUWG1731A	Guide Plate	2
○	20-5	SBEG210A	Latch	2
	20-6	SKXG80A	Handle Rubber	1
	20-7	SKXG100A	Handle Cap	2
	20-8	SKXG90A	Handle Spring	2
○	20-9	SGBG90B	Technics Badge	1
○	20-10	SHRG9880A	Music Ruck Clamper	4
		CABINET PARTS		
○	21	SGWG8140C	Side Control Panel	1
○	22	SKSG1880A	Left Plank	1
○	23	SYWG8150E	Cover Panel, Left	1
○	24	SGWG1820C	Front Control Panel	1
	25	SHRG9840A	Cushion, for Music Rack	1
○	26	SYWG8160E	Cover Panel, Right	1
○	27	SKSG1890A	Right Plank	1
○	28	SBLG60A	Stay, Left	1
○	29	SBLG70A	Stay, Right	1
	30	SGXG2480A	Ornament Panel, for Lower Keyboard	1
○	31	SGXG2471A	Front Panel	1
○	32	SGXG2610A	Rear Panel	1
	33	SBHG170A	Hinge	3
○	34 M MC	SGXG2640A	Rear Accessory Panel, [M] and [MC] areas	1
○	34	SGXG2644A	Rear Accessory Panel, Except for [M] and [MC] areas	1
○	35	SKZG9340A	Speaker Box	1
○	36	SHRGA7050A	Sponge	1
○	37	SKZG4670A	Baffle	1
	38	SHRG2210A	Foot	2
	39	SBHG120A	Hinge, for Cabinet Cover	2
	40	SHRG7250A	Corner Cushion	4
	41	SUWG1730A	Guide Plate	2
○	42	SBEG200A	Latch	2
	43	SHGG8011A	P.C.B. Support Rubber	1
	44	SHRG9340A	P.C.B. Holder	7
	45 EZ	SHRG4020A	P.C.B. Supporter, [EZ] area	3
		KNOBS, BUTTONS		
	46	SBNG7050A	KNOB (TRANSPOSE, TEMPO)	2
	47	SBCG110B	BUTTON, POWER SW.	1
	48	SBCG270F01	POLY (ORCHESTRAL)	2
	49	SBCG270G01	SPECIAL (ORCHESTRAL)	2
	50	SBCG270D01	SOLO (CONDUCTOR)	2

Ref. No.	Part No.	Description	Per/Set
51	SBCG270C14	SET (VOICE SETTING COMPUTER)	1
52	SBCG270A12	CANSEL (VOICE SETTING COMPUTER)	1
53	SBCG270A13	1 (VOICE SETTING COMPUTER)	1
54	SBCG270A14	2 (VOICE SETTING COMPUTER)	1
55	SBCG270A15	3 (VOICE SETTING COMPUTER)	1
56	SBCG270A16	4 (VOICE SETTING COMPUTER)	1
57	SBCG270A17	BASS (LOWER PLAY SEQUENCER)	1
58	SBCG270F12	LOWER (LOWER PLAY SEQUENCER)	1
59	SBCG270F13	UPPER (LOWER PLAY SEQUENCER)	1
60	SBCG270D01	SOLO (LOWER PLAY SEQUENCER)	1
61	SBCG270D02	SYNTHE (U & L SOLO)	1
62	SBCG270D03	FLUTE (U & L SOLO)	1
63	SBCG270D04	SAXOPHONE (U & L SOLO)	1
64	SBCG270D05	TRUMPET (U & L SOLO)	1
65	SBCG270F02	SYNTHE (UPPER POLY)	1
66	SBCG270F03	JAZZ GUITAR (UPPER POLY)	1
67	SBCG270F04	HARPSICHORD (UPPER POLY)	1
68	SBCG270F05	PIANO (UPPER POLY)	1
69	SBCG270F06	TROMBONE (UPPER POLY)	1
70	SBCG270F07	STRINGS (UPPER POLY)	1
71	SBCG270F08	ORGAN (UPPER POLY)	1
72	SBCG270G02	TAB VOICES (UPPER POLY)	1
73	SBCG270F01	POLY (EFFECT)	2
74	SBCG270G01	SPECIAL (EFFECT)	1
75	SBCG270D01	SOLO (EFFECT)	1
76	SBCG270C01	TREMOLO (EFFECT)	1
77	SBCG270C02	CHORUS (EFFECT)	1
78	SBCG270A01	BASS 8′ (BASS)	1
79	SBCG270A02	BASS 16′ (BASS)	1
80	SBCG270A03	ACOUSTIC BASS (BASS)	1
81	SBCG270A04	ELECTRIC BASS (BASS)	1
82	SBCG270F07	STRINGS (LOWER POLY)	1
83	SBCG270F08	ORGAN (LOWER POLY)	1
84	SBCG270F09	JAZZ GUITAR (LOWER POLY)	1
85	SBCG270F10	HARPSICHORD (LOWER POLY)	1
86	SBCG270F11	PIANO (LOWER POLY)	1
87	SBCG270G02	TAB VOICES (LOWER POLY)	1
88	SBCG270G03	JAZZ GUITAR (U & L SPECIAL)	1
89	SBCG270G04	HARPSICHORD (U & L SPECIAL)	1
90	SBCG270G05	PIANO (U & L SPECIAL)	1
91	SBCG270G06	SYNTHE (U & L SPECIAL)	1
92	SBCG270G07	SAXOPHONE (U & L SPECIAL)	1
93	SBCG270G08	TRUMPET (U & L SPECIAL)	1
94	SBCG270C03	WALTZ (RHYTHM)	1
95	SBCG270C04	RHUMBA (RHYTHM)	1
96	SBCG270C05	8 BEAT (RHYTHM)	1
97	SBCG270C06	MARCH (RHYTHM)	1
98	SBCG270C07	SAMBA (RHYTHM)	1
99	SBCG270C08	DISCO I (RHYTHM)	1
100	SBCG270C09	16 BEAT (RHYTHM)	1
101	SBCG270C10	SWING (RHYTHM)	1
102	SBCG270A05	II (FILL IN & INTRO)	1
103	SBCG270A06	I (FILL IN & INTRO)	1
104	SBCG270A07	MELODIC (BASS & ACCOMP)	1
105	SBCG270A08	I/II (BASS & ACCOMP)	1
106	SBCG270G09	ON (ENDING)	1

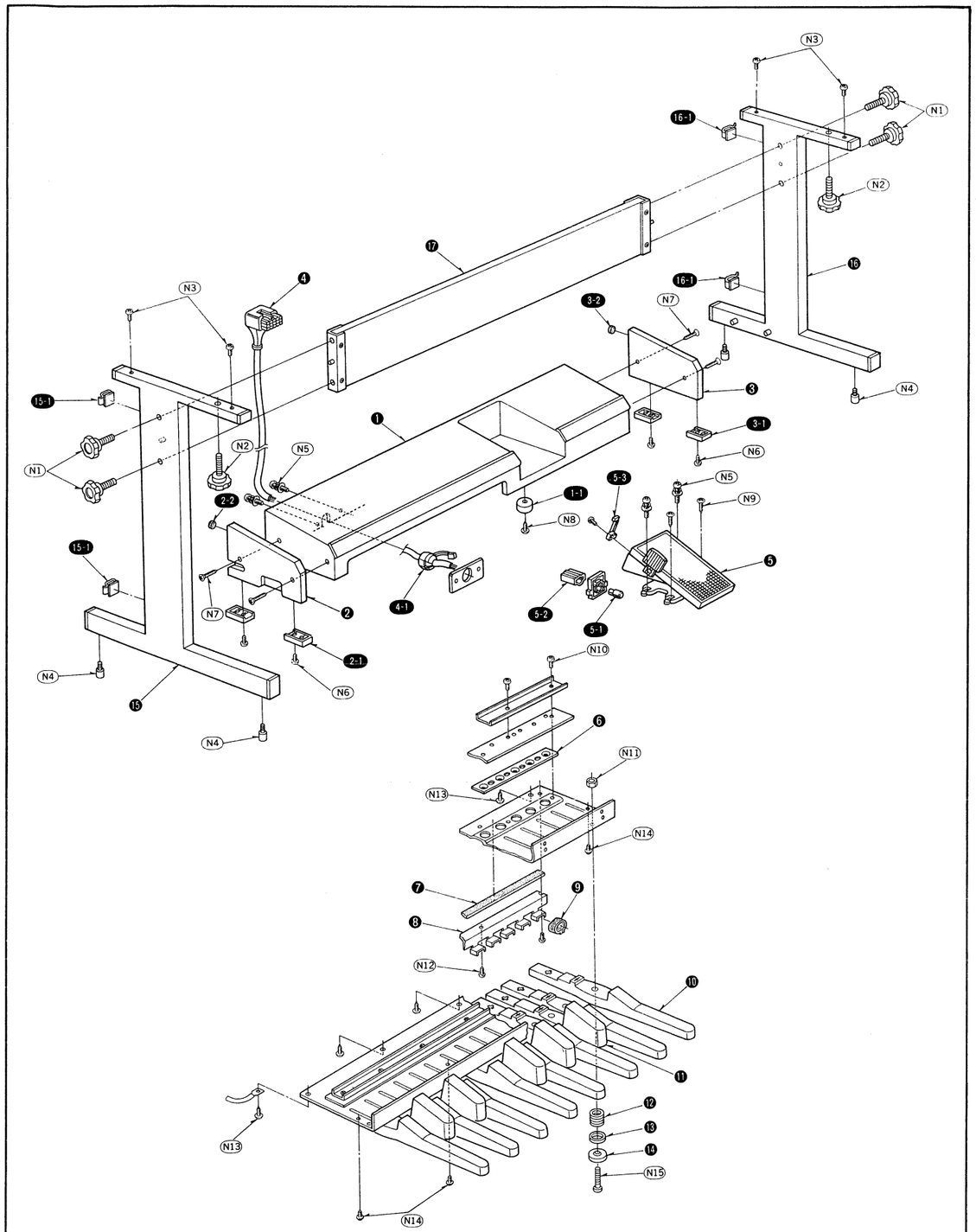
Ref. No.	Part No.	Description	Per/Set
107	SBCG270A10	MEMORY (PLAY MODE)	1
108	SBCG270A11	FINGERED (PLAY MODE)	1
109	SBCG270C12	PCC (PLAY MODE)	1
110	SBCG270A09	ON (TECHNI-CHORD)	1
111	SBCG270C11	CLOSE/PROGRAM (TECHNI-CHORD)	1
112	SBCG270D06	ON (RECORD)	1
113	SBCG270G10	FSC	1
114	SBCG270H02	ONE TOUCH PLAY	1
115	SBCG270C13	SYNCHRO & BREAK	1
116	SBCG270H01	START/STOP	1
117	SBCG260A	MAIN VOLUME, SUSTAIN	10
118	SBCG260C	VOLUME (U & L SOLO, UPPER POLY, LOWER POLY, U & L SPECIAL, REVERB, BASS, DRUMS, ACCOMP)	16
		OTHERS	
119 XR XL	SJS9334A	AC Inlet Cover, [XR] and [XL] areas	1
119	SJS9231A	AC Inlet Cover, Except for [XR] and [XL] areas	1
		ACCESSORIES	
○ 120	SUWG2820A	Bracket, for Floopy Disk Drive Unit	1
121 M MC ⚠	SJAG62	AC Cord, [M] and [MC] areas	1
121 EK ⚠	SJAG39	AC Cord, [EK] area	1
121 XR XL ⚠	SJAG61	AC Cord, [XR] and [XL] areas	1
121 ⚠	SJAG41	AC Cord, Except for [M], [MC], [EK], [XR] and [XL] areas	1
○ EN	SQFGA660	Instruction Book, [EN] area	1
○	SQFGA800	Instruction Book, Except for [EN] area	1
○	SQCG340A	Bag	1
○	SHRGA5440A	Partition	1

■ STAND

Ref. No.	Part No.	Description	Per/Set
		SCREWS & WASHERS	
	N1	XTB4+12FFZ	Screw	12
	N2	XYN4+C20FZ	Screw, with Washer	2
	N3	XSC4+12FC	Screw	6
○	N4	XSC4+12FZ	Screw	6
○	N5	XSC3+16FC	Screw	6
○	N6	XSC5+20FZ	Screw	2
	N7	SNEG540A	Speed Nut	1
	N8	SNEG550A	Speed Nut	2
	N9	XTV3+10G	Screw	8
	N10	SNE499-1	Nut	6
	N11	XTB4+16A	Screw	10
	N12	XTW3+14J	Screw	18
	N13	SNEG740A	Screw	2
	N14	XTB4+12A	Screw	23
	N15	XTS3+8C	Screw	4
	N16	XTC3+20A	Screw	4
	N17	XTW3+10QFVC	Screw	1
	N18	XTB3+6C	Screw	1
	N19	XYN5+C10	Screw, with Washer	5
	N20	XTV3+12G	Screw	8
	N21	XTW3+6J	Screw	12
	N22	XTW3+8JFZ	Screw	4
	N23	SNEG1241A	Screw	5
	N24	XTB35+20A	Screw	13
	N25	EZ XTB35+14A	Screw	3
	N26	XYN4+F10	Screw, with Washer	6
	N27	XTB35+8A	Screw	8
	N28	XTN2+10FFX	Screw	1
	N29	XTB3+10A	Screw	3
	N30	XYN3+C12	Screw, with Washer	1
	N31	XYN3+F14FZ	Screw, with Washer	2
	N32	XTV3+10BFZ	Screw	2
	N33	SNEG620A	Washer	2
	N34	XTC4+20AFC	Screw	6
	N35	XTB4+25AFC	Screw	2
	N36	XTB35+14AFZ	Screw	12
	N37	XTC4+20AFZ	Screw	6
	N38	XTC35+25AFC	Screw	6
○	N39	SNEG1810A	Screw, with Washer	4
○	N40	SNEG2010A	Screw, with Washer	2
	N41	XYN5+C25FZ	Screw, with Washer	2
	N42	XSN5+85FZ	Screw	2
	N43	XWA5BFZ	Washer	2
	N44	SNEG150B	Washer	4
	N45	SNEG1560A	Thumb Screw	2
	N46	XTB3+5C	Screw	6
	N47	XTW3+10T	Screw	24

Ref. No.	Part No.	Description	Per/Set
		PEDAL BOX	
	1	SKZGD260A	Pedal Box Ass'y	1
	1-1	⌈ SKLA7-2	Foot	1
○	2	SKSG1900A	Left Plank	1
	2-1	⌈ SHRG2060C	Foot	2
	2-2	⌊ SHSG3330A	Felt	1
○	3	SKSG1920A	Right Plank	1
	3-1	⌈ SHRG2060C	Foot	2
	3-2	⌊ SHSG3330A	Felt	1
○	4	SWKG158ZA	Wire with Connector	1
	4-1	⌈ SHRG1190A	Bushing	1
		EXPRESSION PEDAL	
○	5	SXVG5080A	Expression Pedal Ass'y	1
	5-1	⌈ XAMR55P	Lamp	1
	5-2	⎪ RJS205ZA	Socket	1
	5-3	⌊ SSHG14	Foot Switch	1
		PEDAL KEYBOARD	
	6	SHGG50A	Rubber Switch (5 continuous)	3
	7	SHSG1600B	Felt (Key Stopper)	1
	8	STBG4011A	Key Guide	1
	9	SHSG1460A	Felt (Key Guide)	13
	10	STBG1090B	White Key	8
	11	STBG2052A	Black Key	5
	12	SUSG180A	Spring	13
	13	SHGG8130A	Rubber	13
	14	SHRG9240A	Spacer	13
		LEG & CROSSBAR	
○	15	SGXG2621A	Left Leg Ass'y	1
	15-1	⌈ SHRG9620A	Cord Clamper	2
○	16	SGXG2631A	Right Leg Ass'y	1
	16-1	⌈ SHRG9620A	Cord Clamper	2
○	17	SKZG7690A	Crossber	1
		SCREWS	
	N1	SNEG2090A	Thumb Screw	4
	N2	SNEG2100A	Thumb Screw	2
	N3	XSN4+6FZ	Screw	4
	N4	SNEG880A	Adjuster Bolt	4
	N5	XYN4+F20FZ	Screw, with Washer	4
	N6	XTB3+20A	Screw	4
	N7	XTC4+30AFZ	Screw	4
	N8	XTB35+16A	Screw	1
	N9	XTT4+16AFZ	Screw	2
	N10	XTB3+6F	Screw	6
	N11	XNG5BS	Nut	13
	N12	XTB3+6B	Screw	5
	N13	XTT4+16A	Screw	4
	N14	XTW3+8J	Screw	3
	N15	SNEG360A	Screw	13

EXPLODED VIEWS OF STAND



REPLACEMENT PARTS LIST.....P.C.B. and Wiring Parts

Notes:

1. Printed circuit boards are supplied only during the period of production.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ Numbering System of Resistor

- All resistors are 1/4 WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagram.
- Resistors with Ⓕ symbolic mark are Flame-Proof resistors.
- Resistors with [F] symbolic mark are fuse type Flame-Proof resistors.

Resistor Type	Wattage	Tolerance
ERD : Carbon ERD—F : Carbon, Flame-Proof ERO : Metal Film	S2 : 1/4W 2 : 1/4W 25 : 1/4W 50 : 1/2W	F : ±1% G : ±2% J : ±5%
ERQ : Metal Oxide Fuse Type ERG : Metal Oxide ERX : Metal Film	14 : 1/4W 1 : 1W	

Example:

Carbon: ERD (Type) S2 (Wattage) T (Shape) J (Tolerance) 101 (Value)

Carbon Flame-Proof: ERD (Type) 2 (Wattage) F (Flame-Proof) C (Fuse Type) G (Tolerance) 101 (Value)

Metal Oxide, Fuse Type: ERQ (Type) 14 (Wattage) A (Flame-Proof) J (Tolerance) 2R0 (Value)

Metal Oxide, (Metal Film): ERG(X) (Type) 1 (Wattage) AN (Shape) J (Tolerance) 221 (Value)

■ Numbering System of Capacitor

- All capacitors are microfarads unless otherwise specified in the schematic diagram.

Capacitor Type	Symbol Mark	Voltage		Tolerance
		ECEA Type	Others	
ECEA(T) : Electrolytic		0J : 6.3V	1H : 50V	ECEA Type : ±20%
ECEA—N : Non-Polar Electrolytic	Ⓝ	1C : 16V	1E : 25V	J : ±5%
ECEA—Y : Non-Polar Electrolytic	Ⓨ	1E : 25V		K : ±10%
ECEA—M : Electrolytic, MSR Series	Ⓜ	1V : 35V		Z : +80% −20%
ECEA—K : Electrolytic, miniature type	Ⓚ	1H : 50V		
ECQV : TF Capacitor	Ⓣ	35 : 35V		
ECQB : Polyester	Ⓣ			
ECQM(G) : Polyester				
ECC : Ceramic	○			
ECK : Ceramic	○			

Example:

Electrolytic: ECEA(T) (Type) 0J (Voltage) U(R) (Peculiarity use) 470 (Value)

MSR Series: ECEA (Type) 50 (Voltage) M (Peculiarity use) 1 (Value) R (Special use)

TF, Polyester: ECQV (Type) 1H (Voltage) 104 (Value) J (Tolerance)

Ceramic: ECC (Type) R (Shape) 1H (Voltage) 220 (Value) J (Tolerance)

Ceramic: ECK (Type) R (Shape) 1E (Voltage) 473 (Value) Z (Tolerance) V (Peculiarity use)

■ PRINTED CIRCUIT BOARD

Ref. No.		Part No.	Description	Per/Set
Except for [EZ] area				
○		SXPG136511	Main	1
○		SXPG135121	Digital Sound Generator	1
○		SXPG135421	Drum Percussion	1
○		SXPG136611B	Effector	1
○		SXPG135321	Front Control Panel	1
○		SXPG135251A	Side Control Panel	1
		SXPG126711	Upper Manual Keyboard	1
		SXPG126721	Lower Manual Keyboard	1
		SXPG107851	Pedal Keyboard	1
		SXPG103211	Expression	1
○	M MC	SXPG136631A	Amp & Power Supply, [M] and [MC] areas	1
○	XR XL	SXPG136651A	Amp & Power Supply, [XR] and [XL] areas	1
○		SXPG136611A	Amp & Power Supply, other areas	1
○		SXPG139911	Headphones	1

Ref. No.		Part No.	Description	Per/Set
[EZ] area				
○		SXPG136531	Main	1
○		SXPG135121	Digital Sound Generator	1
○		SXPG135421	Drum Percussion	1
○		SXPG136611B	Effector	1
○		SXPG135321	Front Control Panel	1
○		SXPG135251A	Side Control Panel	1
		SXPG126711	Upper Manual Keyboard	1
		SXPG126721	Lower Manual Keyboard	1
		SXPG107851	Pedal Keyboard	1
		SXPG103211	Expression	1
		SXPG137511	EXLF	1
○		SXPG136641A	Amp & Power Supply	1
○		SXPG139911	Headphones	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
	IC1	SVIG7810H	1 chip 8 bit Microcomputer	1
	IC2	SVIGM6050211	Gate Array	1
○	IC3	SVIG05C300A0	512K bit EP ROM	1
	IC4	SVIGD446415L	64K bit S RAM	1
	IC6	SVIGM74LS05	Hex Inverter O.C.	1
	IC7	SVIGM74LS07	Hex Buffer O.C.	1
	IC8	SVIGPC900	Photo Coupler	1
	IC9, 10, 36~38, 41, 43~48, 52~54, 57	SVIGM5218L	Operational Amplifier	16
	IC11	SVIG2000C209	2M bit Wave ROM	1
	IC12, 13	MN6635	Digital Sound Processor	2
	IC14, 15	SVIGBA9221	12 bit D-A Converter	2
	IC16, 17	MN74HC4051	8-channel Multiplexer	2
	IC18, 19	SVIGM5238L	Operational Amplifier	2
	IC20~35	SVIGUPD4066B	Quadruple Bilateral Switch	16
	IC39, 40	SVIGTC4053BP	Triple 2-channel Multiplexer	2
	IC42	SVIGM5216LL	Operational Amplifier	1
	IC49~51	SVIGM5241L	Dual VCA	3
	IC55	SVIGMSM4051R	8-channel Multiplexer	1
	IC56	SVIGLM1894N	Dynamic Noise Reduction	1
		TRANSISTORS		
S	Q1, 3, 8, 11, 12, 15, 16, 19, 20, 23, 24, 27, 28, 34, 39	2SA1015-GR	2SA933STRS	15
S	Q2, 9, 10, 13, 14, 17, 18, 21, 22, 25, 26, 36, 41	2SC2320LFG	2SC1310FG	13
	Q4~7, 100, 101	2SJ40CD	FET	6
	Q29~33, 38, 43	2SK381D	FET	7
○	Q35, 40	2SC3940ARS		2
○	Q37, 42	2SA1534ARS		2
		DIODES		
	D1~9, 11~13, 50~58	MA165TA5		21
		OSCILLATORS		
	X1	SVQG49S1500T	15MHz, Quartz Oscillator	1
	X2	EF0FC4004A3	4MHz, Ceramic Oscillator	1
	X3	SVQG49S1600T	16MHz, Quartz Oscillator	1
		COMPONENT COMBINATIONS		
	Z3	EXBP88472JM	4.2KΩ×8	1
	Z4, 5	EXKS14Z2073	1K/2KΩ, Ladder Network	2
		COILS		
	L1	SLQG13W6D1P	Coil	1
	L4~9	SLQG15W23APS	Coil EZ area	6
	L10	SLCGRN2	Coil	1

Ref. No.	Part No.	Description	Per/Set
	JACKS		
JK1~6	SJJG400A	LINE OUT ($R/_{R+L}$, L), Bass, DRUMS ($R/_{R+L}$, L), AUX IN	6
JK7~9	SJSG1370A	MIDI (IN, OUT, THRU)	3
JK10	SJJG490A	EXT I/O (FD)	1
	SWITCHES		
SW1, 2	SSSG2002A	SP MUTE, MAIN MIX	2
	SEMI-FIXED RESISTOR		
VR1	EVSG0E1B104A	100KΩ B, Reverb Depth	1
	RESISTORS		
R1	ERDS2TJ221	220Ω	1
R2	ERDS2TJ331	330Ω	1
R3, 4	ERDS2TJ101	100Ω	2
R5	ERDS2TJ221	220Ω	1
R6	ERDS2TJ472	4.7KΩ	1
R7, 8	ERDS2TJ103	10KΩ	2
R9	ERDS2TJ102	1KΩ	1
R10, 11	ERDS2TJ472	4.7KΩ	2
R12	ERDS2TJ333	33KΩ	1
R13	ERDS2TJ330	33Ω	1
R14	ERDS2TJ681	680Ω	1
R15	ERDS2TJ330	33Ω	1
R16	ERDS2TJ102	1KΩ	1
R17	ERDS2TJ332	3.3KΩ	1
R18	ERDS2TJ471	470Ω	1
R19	ERDS2TJ473	47KΩ	1
R20	ERDS2TJ184	180KΩ	1
R21, 22	ERDS2TJ472	4.7KΩ	2
R25	ERDS2TJ333	33KΩ	1
R26	ERDS2TJ222	2.2KΩ	1
R33	ERDS2TJ105	1MΩ	1
R35	ERDS2TJ474	470KΩ	1
R36	ERDS2TJ124	120KΩ	1
R37	ERDS2TJ184	180KΩ	1
R38	ERDS2TJ474	470KΩ	1
R39	ERDS2TJ124	120KΩ	1
R40	ERDS2TJ184	180KΩ	1
R41	ERDS2TJ474	470KΩ	1
R42	ERDS2TJ124	120KΩ	1
R43	ERDS2TJ104	100KΩ	1
R44	ERDS2TJ474	470KΩ	1
R45	ERDS2TJ124	120KΩ	1
R46	ERDS2TJ104	100KΩ	1
R47	ERDS2TJ222	2.2KΩ	1
R48	ERDS2TJ332	3.3KΩ	1
R49	ERDS2TJ153	15KΩ	1
R50	ERDS2TJ683	68KΩ	1
R51	ERDS2TJ332	3.3KΩ	1
R52	ERDS2TJ102	1KΩ	1
R54, 55	ERDS2TJ471	470Ω	2
R56	ERDS2TJ123	12KΩ	1
R57, 58	ERDS2TJ471	470Ω	2
R61, 62	ERDS2TJ472	4.7KΩ	2
R63	ERDS2TJ151	150Ω	1
R64, 65	ERDS2TJ331	330Ω	2
R66	ERDS2TJ473	47KΩ	1
R67	ERDS2TJ151	150Ω	1
R68, 69	ERDS2TJ331	330Ω	2
R70	ERDS2TJ473	47KΩ	1
R71	ERDS2TJ151	150Ω	1

Ref. No.	Part No.	Description	Per/Set
R72, 73	ERDS2TJ331	330Ω	2
R74	ERDS2TJ473	47KΩ	1
R75	ERDS2TJ151	150Ω	1
R76, 77	ERDS2TJ331	330Ω	2
R78	ERDS2TJ473	47KΩ	1
R79	ERDS2TJ151	150Ω	1
R80, 81	ERDS2TJ331	330Ω	2
R82	ERDS2TJ473	47KΩ	1
R83	ERDS2TJ151	150Ω	1
R84, 85	ERDS2TJ331	330Ω	2
R86	ERDS2TJ473	47KΩ	1
R87	ERDS2TJ151	150Ω	1
R88, 89	ERDS2TJ331	330Ω	2
R90	ERDS2TJ473	47KΩ	1
R91	ERDS2TJ151	150Ω	1
R92, 93	ERDS2TJ331	330Ω	2
R94	ERDS2TJ473	47KΩ	1
R95	ERDS2TJ104	100KΩ	1
R96	ERDS2TJ224	220KΩ	1
R97	ERDS2TJ333	33KΩ	1
R98	ERDS2TJ151	150Ω	1
R99, 100	ERDS2TJ331	330Ω	2
R101	ERDS2TJ473	47KΩ	1
R102	ERDS2TJ151	150Ω	1
R103, 104	ERDS2TJ331	330Ω	2
R105	ERDS2TJ473	47KΩ	1
R106	ERDS2TJ151	150Ω	1
R107, 108	ERDS2TJ331	330Ω	2
R109	ERDS2TJ473	47KΩ	1
R110	ERDS2TJ151	150Ω	1
R111, 112	ERDS2TJ331	330Ω	2
R113	ERDS2TJ473	47KΩ	1
R114	ERDS2TJ151	150Ω	1
R115, 116	ERDS2TJ331	330Ω	2
R117	ERDS2TJ473	47KΩ	1
R118	ERDS2TJ151	150Ω	1
R119, 120	ERDS2TJ331	330Ω	2
R121	ERDS2TJ473	47KΩ	1
R122	ERDS2TJ151	150Ω	1
R123, 124	ERDS2TJ331	330Ω	2
R125	ERDS2TJ473	47KΩ	1
R126	ERDS2TJ151	150Ω	1
R127, 128	ERDS2TJ331	330Ω	2
R129, 130	ERDS2TJ473	47KΩ	2
R132~135	ERDS2TJ471	470Ω	4
R136	ERDS2TJ183	18KΩ	1
R200	ERDS2TJ103	10KΩ	1
R201	ERDS2TJ682	6.8KΩ	1
R202~205	ERDS2TJ103	10KΩ	4
R206~214	ERDS2TJ223	22KΩ	9
R215	ERDS2TJ473	47KΩ	1
R216	ERDS2TJ472	4.7KΩ	1
R217~219	ERDS2TJ473	47KΩ	3
R220	ERDS2TJ153	15KΩ	1
R221	ERDS2TJ472	4.7KΩ	1
R222~224	ERDS2TJ473	47KΩ	3
R226	ERDS2TJ682	6.8KΩ	1
R227, 228	ERDS2TJ473	47KΩ	2
R229	ERDS2TJ153	15KΩ	1
R231	ERDS2TJ393	39KΩ	1
R232	ERDS2TJ102	1KΩ	1
R233	ERDS2TJ223	22KΩ	1
R235	ERDS2TJ683	68KΩ	1
R236	ERDS2TJ222	2.2KΩ	1
R237	ERDS2TJ223	22KΩ	1
R240	ERDS2TJ223	22KΩ	1
R241	ERDS2TJ334	330KΩ	1
R242	ERDS2TJ472	4.7KΩ	1

Ref. No.	Part No.	Description	Per/Set
R244	ERDS2TJ472	4.7KΩ	1
Ⓕ R245 ⚠	ERG1ANJ121	120Ω, 1W	1
R246	ERDS2TJ151	150Ω	1
R248, 249	ERDS2TJ104	100KΩ	2
R250	ERDS2TJ224	220KΩ	1
R252	ERDS2TJ474	470KΩ	1
R253	ERDS2TJ222	2.2KΩ	1
R254	ERDS2TJ103	10KΩ	1
R255	ERDS2TJ473	47KΩ	1
R256	ERDS2TJ223	22KΩ	1
R257	ERDS2TJ472	4.7KΩ	1
R258	ERDS2TJ223	22KΩ	1
R259	ERDS2TJ103	10KΩ	1
R260	ERDS2TJ473	47KΩ	1
R261	ERDS2TJ333	33KΩ	1
R262	ERDS2TJ472	4.7KΩ	1
R263	ERDS2TJ682	6.8KΩ	1
R264	ERDS2TJ683	68KΩ	1
R265	ERDS2TJ154	150KΩ	1
R266	ERDS2TJ153	15KΩ	1
R267	ERDS2TJ105	1MΩ	1
R268	ERDS2TJ153	15KΩ	1
R269	ERDS2TJ681	680Ω	1
R270, 271	ERDS2TJ331	330Ω	2
R272	ERDS2TJ153	15KΩ	1
R273	ERDS2TJ473	47KΩ	1
R274	ERDS2TJ333	33KΩ	1
R275	ERDS2TJ472	4.7KΩ	1
R276	ERDS2TJ682	6.8KΩ	1
R277	ERDS2TJ153	15KΩ	1
R278	ERDS2TJ154	150KΩ	1
R279	ERDS2TJ683	68KΩ	1
R280	ERDS2TJ224	220KΩ	1
R281	ERDS2TJ184	180KΩ	1
R282	ERDS2TJ224	220KΩ	1
R283	ERDS2TJ184	180KΩ	1
R284	ERDS2TJ224	220KΩ	1
R285	ERDS2TJ105	1MΩ	1
R286	ERDS2TJ103	10KΩ	1
R287	ERDS2TJ474	470KΩ	1
R288	ERDS2TJ334	330KΩ	1
R289, 290	ERDS2TJ223	22KΩ	2
R291	ERDS2TJ154	150KΩ	1
R292	ERDS2TJ224	220KΩ	1
R293	ERDS2TJ474	470KΩ	1
R295	ERDS2TJ334	330KΩ	1
[F] R297, ⚠ 298	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	2
[F] R299, ⚠ 300	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R301	ERDS2TJ154	150KΩ	1
R302	ERDS2TJ104	100KΩ	1
R303	ERDS2TJ473	47KΩ	1
R304, 305	ERDS2TJ103	10KΩ	2
R306	ERDS2TJ152	1.5KΩ	1
R308	ERDS2TJ104	100KΩ	1
R310	ERDS2TJ473	47KΩ	1
R311, 312	ERDS2TJ103	10KΩ	2
R313	ERDS2TJ152	1.5KΩ	1
R315	ERDS2TJ683	68KΩ	1
R317	ERDS2TJ473	47KΩ	1
R318, 319	ERDS2TJ103	10KΩ	2
R320	ERDS2TJ152	1.5KΩ	1
R322	ERDS2TJ683	68KΩ	1
R324	ERDS2TJ473	47KΩ	1
R325, 326	ERDS2TJ103	10KΩ	2
R328	ERDS2TJ474	470KΩ	1
R329	ERDS2TJ683	68KΩ	1

Ref. No.	Part No.	Description	Per/Set
R331	ERDS2TJ473	47KΩ	1
R332, 333	ERDS2TJ103	10KΩ	2
R335	ERDS2TJ683	68KΩ	1
R336	ERDS2TJ153	15KΩ	1
R337	ERDS2TJ225	2.2MΩ	1
R338	ERDS2TJ472	4.7KΩ	1
R339	ERDS2TJ473	47KΩ	1
R340	ERDS2TJ103	10KΩ	1
R341	ERDS2TJ472	4.7KΩ	1
R342	ERDS2TJ225	2.2MΩ	1
R343, 344	ERDS2TJ104	100KΩ	2
R345	ERDS2TJ473	47KΩ	1
R346	ERDS2TJ333	33KΩ	1
R347	ERDS2TJ104	100KΩ	1
R348	ERDS2TJ473	47KΩ	1
R349	ERDS2TJ333	33KΩ	1
R351~354	ERDS2TJ472	4.7KΩ	4
R357, 358	ERDS2TJ103	10KΩ	2
R363	ERDS2TJ474	470KΩ	1
R364, 365	ERDS2TJ152	1.5KΩ	2
R366	ERDS2TJ331	330Ω	1
R368	ERDS2TJ473	47KΩ	1
R370	ERDS2TJ152	1.5KΩ	1
R371~374	ERDS2TJ100	10Ω	4
R400	ERDS2TJ333	33KΩ	1
R404, 405	ERDS2TJ101	100Ω	2
R406	ERDS2TJ221	220Ω	1
R409, 410	ERDS2TJ472	4.7KΩ	2
R411	ERDS2TJ682	6.8KΩ	1
R412	ERDS2TJ105	1MΩ	1
R413	ERDS2TJ472	4.7KΩ	1
R415	ERDS2TJ473	47KΩ	1
R422	ERDS2TJ152	1.5KΩ	1
R474	ERDS2TJ473	47KΩ	1
R500	ERDS2TJ103	10KΩ	1
R601, 602	ERDS2TJ152	1.5KΩ	2
R603~605	ERDS2TJ102	1KΩ	3
R606, 607	ERDS2TJ222	2.2KΩ	2
R608, 609	ERDS2TJ102	1KΩ	2
R610, 611	ERDS2TJ473	47KΩ	2
R612	ERDS2TJ103	10KΩ	1
R613	ERDS2TJ334	330KΩ EZ area	1
R614	ERDS2TJ103	10KΩ	1
R615~617	ERDS2TJ334	330KΩ	3
R618	ERDS2TJ151	150Ω	1

CAPACITORS

Ref. No.	Part No.	Description	Per/Set
○ C1, 2	ECKR1E473ZV	0.047μF	2
C3	ECQG1H102KZ	0.001μF	1
○ C4	ECKR1E473ZV	0.047μF	1
○ C6	ECKR1E473ZV	0.047μF	1
C8	ECEA0JU102	1000μF, 6.3V	1
C9	ECEA1HU010	1μF, 50V	1
ⓉⒻ C10	ECQV1H104JZ	0.1μF	1
○ C12	ECCR1H221J	220PF	1
○ C13	ECKR1E473ZV	0.047μF	1
ⓉⒻ C16	ECQV1H104JZ	0.1μF	1
ⓉⒻ C17	ECQB1H153JZ	0.015μF	1
ⓉⒻ C18	ECQV1H104JZ	0.1μF	1
ⓉⒻ C19	ECQB1H153JZ	0.015μF	1
ⓉⒻ C20	ECQV1H104JZ	0.1μF	1
ⓉⒻ C21	ECQV1H473JZ	0.047μF	1
ⓉⒻ C22	ECQV1H474JZ	0.47μF	1
ⓉⒻ C23	ECQB1H103JZ	0.01μF	1
ⓉⒻ C24	ECQV1H104JZ	0.1μF	1
C25	EECF5R5U104	0.1F, 5.5V, Liquid Electrolyte Double Layer	1

Ref. No.	Part No.	Description	Per/Set
○ C27, 28	ECCR1H220J	22PF	2
○ C29	ECKR1E473ZV	0.047μF	1
○ C49, 51	ECKR1E473ZV	0.047μF	2
○ C55	ECKR1E473ZV	0.047μF	1
○ C57	ECKR1E473ZV	0.047μF	1
○ C59	ECKR1E473ZV	0.047μF	1
○ C60	ECCR1H221J	220PF	1
C62	ECEA1CU470	47μF, 16V	1
C63	ECQG1H472KZ	0.0047μF	1
C64	ECQG1H102KZ	0.001μF	1
C65	ECQG1H472KZ	0.0047μF	1
C66	ECQG1H102KZ	0.001μF	1
C67	ECQG1H472KZ	0.0047μF	1
C68	ECQG1H102KZ	0.001μF	1
C69	ECQG1H472KZ	0.0047μF	1
C70	ECQG1H102KZ	0.001μF	1
C71	ECQG1H472KZ	0.0047μF	1
C72	ECQG1H102KZ	0.001μF	1
C73	ECQG1H472KZ	0.0047μF	1
C74	ECQG1H102KZ	0.001μF	1
C75	ECQG1H472KZ	0.0047μF	1
C76	ECQG1H102KZ	0.001μF	1
C77	ECQG1H472KZ	0.0047μF	1
C78	ECQG1H102KZ	0.001μF	1
○ C79, 80	ECCR1H221J	220PF	2
○ C81	ECCR1H681J	680PF	1
C82	ECQG1H472KZ	0.0047μF	1
C83	ECQG1H102KZ	0.001μF	1
C84	ECQG1H472KZ	0.0047μF	1
C85	ECQG1H102KZ	0.001μF	1
C86	ECQG1H472KZ	0.0047μF	1
C87	ECQG1H102KZ	0.001μF	1
C88	ECQG1H472KZ	0.0047μF	1
C89	ECQG1H102KZ	0.001μF	1
C90	ECQG1H472KZ	0.0047μF	1
C91	ECQG1H102KZ	0.001μF	1
C92	ECQG1H472KZ	0.0047μF	1
C93	ECQG1H102KZ	0.001μF	1
C94	ECQG1H472KZ	0.0047μF	1
C95	ECQG1H102KZ	0.001μF	1
C96	ECQG1H472KZ	0.0047μF	1
C97	ECQG1H102KZ	0.001μF	1
○ C98	ECCR1H471J	470PF	1
○ C101	ECKR1E473ZV	0.047μF	1
○ C102	ECCR1H221J	220PF	1
C104, 105	ECEA0JU101	100μF, 6.3V	2
C150~154	ECEA1HU010	1μF, 50V	5
○ C159	ECCR1H471J	470PF	1
C160	ECQG1H222KZ	0.0022μF	1
○ C161, 162	ECCR1H471J	470PF	2
○ C163	ECCR1H101J	100PF	1
C164	ECEA1HU010	1μF, 50V	1
C165	ECQG1H152KZ	0.0015μF	1
C166	ECQG1H222KZ	0.0022μF	1
○ C167	ECCR1H101J	100PF	1
○ C168, 169	ECCR1H471J	470PF	2
C170	ECQM1H223KV	0.022μF	1
○ C171	ECCR1H681J	680PF	1
○ C172	ECCR1H471J	470PF	1
○ C173	ECCR1H151J	150PF	1
C174	ECEA1HU010	1μF, 50V	1
○ C179	ECKR1E473ZV	0.047μF	1
Ⓝ C180	ECEA1HN010S	1μF, 50V	1
○ C181	ECCR1H100J	10PF	1
○ C182	ECCR1H101J	100PF	1
Ⓝ C183	ECEA1HN010S	1μF, 50V	1
○ C184, 185	ECCR1H331J	330PF	2
Ⓝ C186	ECEA1HN010S	1μF, 50V	1

Ref. No.	Part No.	Description	Per/Set
○ C187	ECCR1H220J	22PF	1
(TF) C188	ECQB1H332JZ	0.0033μF	1
(TF) C189	ECQV1H473JZ	0.047μF	1
(TF) C190	ECQB1H102JZ	0.001μF	1
C191	ECEA1EU100	10μF, 25V	1
(TF) C192	ECQV1H104JZ	0.1μF	1
(N) C193	ECEA1HN010S	1μF, 50V	1
(N) C195	ECEA1HN010S	1μF, 50V	1
C196, 197	ECEA1HU010	1μF, 50V	2
C198, 199	ECEA1EU470	47μF, 25V	2
○ C201, 202	ECCR1H220J	22PF	2
○ C203~206	ECCR1H470J	47PF	4
C207	ECEA0JU101	100μF, 6.3V	1
C208, 209	ECEA1EU101	100μF, 25V	2
C210	ECEA0JU101	100μF, 6.3V	1
(MS) C223	ECEA50M2R2R	2.2μF, 50V	1
(TF) C224	ECQB1H222JZ	0.0022μF	1
○ C225	ECCR1H470J	47PF	1
(TF) C226	ECQB1H222JZ	0.0022μF	1
○ C227	ECCR1H470J	47PF	1
C235, 236	ECQG1H472KZ	0.0047μF	2
C240, 241	ECEA1HU010	1μF, 50V	2
○ C244	ECKR1E473ZV	0.047μF	1
○ C246	ECKR1E473ZV	0.047μF	1
○ C254	ECKR1E473ZV	0.047μF	1
○ C316, 317	ECKR1E473ZV	0.047μF	2
C325, 326	ECEA1HU101	100μF, 50V	2
C366	ECEA1HU010	1μF, 50V	1
○ C367	ECKR1E473ZV	0.047μF	1
○ C600	ECCR1H470J	47PF	1
○ C605~609	ECKR1E473ZV	0.047μF	5
○ C610	ECKR1E473ZV	0.047μF	1
○ C611, 612	ECCR1H101J	100PF	2
○ C613~618	ECCR1H331J	330PF	6
(TF) C619~624	ECQV1H104JZ	0.1μF	6

EZ area

DSG DIGITAL SOUND GENERATOR CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
○ IC1	SVIGU320C266	2M bit Wave ROM	1
IC2, 3	MN6635	Digital Sound Processor	2
IC4, 5	SVIGBA9221	12 bit D-A Converter	2
IC6, 7	MN74HC4051	8-channel Multiplexer	2
IC8, 9	SVIGM5238L	Operational Amplifier	2
IC10, 11	SVIGM5218L	Operational Amplifier	2
IC12~27	SVIGUPD4066B	Quadruple Bilateral Switch	16
COMPONENT COMBINATIONS			
Z1, 2	EXKS14Z2073	1K/2KΩ, Ladder Network	2
QUARTZ OSCILLATOR			
X1	SVQG49S1600T	16MHz, Quartz Oscillator	1

Ref. No.	Part No.	Description	Per/Set
RESISTORS			
R5, 6	ERDS2TJ471	470Ω	2
R7	ERDS2TJ123	12KΩ	1
R8~11	ERDS2TJ471	470Ω	4
R12	ERDS2TJ123	12KΩ	1
R13, 14	ERDS2TJ471	470Ω	2
R15, 16	ERDS2TJ472	4.7KΩ	2
R17, 18	ERDS2TJ473	47KΩ	2
R21	ERDS2TJ151	150Ω	1
R22, 23	ERDS2TJ331	330Ω	2
R24	ERDS2TJ473	47KΩ	1
R25	ERDS2TJ151	150Ω	1
R26, 27	ERDS2TJ331	330Ω	2
R28	ERDS2TJ473	47KΩ	1
R29	ERDS2TJ151	150Ω	1
R30, 31	ERDS2TJ331	330Ω	2
R32	ERDS2TJ473	47KΩ	1
R33	ERDS2TJ151	150Ω	1
R34, 35	ERDS2TJ331	330Ω	2
R36	ERDS2TJ473	47KΩ	1
R37	ERDS2TJ151	150Ω	1
R38, 39	ERDS2TJ331	330Ω	2
R40	ERDS2TJ473	47KΩ	1
R41	ERDS2TJ151	150Ω	1
R42, 43	ERDS2TJ331	330Ω	2
R44	ERDS2TJ473	47KΩ	1
R45	ERDS2TJ151	150Ω	1
R46, 47	ERDS2TJ331	330Ω	2
R48	ERDS2TJ473	47KΩ	1
R49	ERDS2TJ151	150Ω	1
R50, 51	ERDS2TJ331	330Ω	2
R52	ERDS2TJ473	47KΩ	1
R53	ERDS2TJ151	150Ω	1
R54, 55	ERDS2TJ331	330Ω	2
R56	ERDS2TJ473	47KΩ	1
R57	ERDS2TJ151	150Ω	1
R58, 59	ERDS2TJ331	330Ω	2
R60	ERDS2TJ473	47KΩ	1
R61	ERDS2TJ151	150Ω	1
R62, 63	ERDS2TJ331	330Ω	2
R64	ERDS2TJ473	47KΩ	1
R65	ERDS2TJ151	150Ω	1
R66, 67	ERDS2TJ331	330Ω	2
R68	ERDS2TJ473	47KΩ	1
R69	ERDS2TJ151	150Ω	1
R70, 71	ERDS2TJ331	330Ω	2
R72	ERDS2TJ473	47KΩ	1
R73	ERDS2TJ151	150Ω	1
R74, 75	ERDS2TJ331	330Ω	2
R76	ERDS2TJ473	47KΩ	1
R77	ERDS2TJ151	150Ω	1
R78, 79	ERDS2TJ331	330Ω	2
R80	ERDS2TJ473	47KΩ	1
R81	ERDS2TJ151	150Ω	1
R82, 83	ERDS2TJ331	330Ω	2
R84	ERDS2TJ473	47KΩ	1
CAPACITORS			
○ C6, 7	ECCR1H220J	22PF	2
○ C8~10	ECKR1E473ZV	0.047μF	3
C11	ECEA1HU010	1μF, 50V	1
○ C12	ECCR1H221J	220PF	1
C13	ECEA0JU101	100μF, 6.3V	1
○ C14, 15	ECKR1E473ZV	0.047μF	2
C16	ECEA1HU010	1μF, 50V	1

Ref. No.	Part No.	Description	Per/Set
○ C17	ECCR1H221J	220PF	1
C18	ECEA0JU101	100μF, 6.3V	1
○ C19	ECKR1E473ZV	0.047μF	1
C20	ECQG1H472KZ	0.0047μF	1
C21	ECQG1H102KZ	0.001μF	1
C22	ECQG1H472KZ	0.0047μF	1
C23	ECQG1H102KZ	0.001μF	1
C24	ECQG1H472KZ	0.0047μF	1
C25	ECQG1H102KZ	0.001μF	1
C26	ECQG1H472KZ	0.0047μF	1
C27	ECQG1H102KZ	0.001μF	1
C28	ECQG1H472KZ	0.0047μF	1
C29	ECQG1H102KZ	0.001μF	1
C30	ECQG1H472KZ	0.0047μF	1
C31	ECQG1H102KZ	0.001μF	1
C32	ECQG1H472KZ	0.0047μF	1
C33	ECQG1H102KZ	0.001μF	1
C34	ECQG1H472KZ	0.0047μF	1
C35	ECQG1H102KZ	0.001μF	1
C36	ECQG1H472KZ	0.0047μF	1
C37	ECQG1H102KZ	0.001μF	1
C38	ECQG1H472KZ	0.0047μF	1
C39	ECQG1H102KZ	0.001μF	1
C40	ECQG1H472KZ	0.0047μF	1
C41	ECQG1H102KZ	0.001μF	1
C42	ECQG1H472KZ	0.0047μF	1
C43	ECQG1H102KZ	0.001μF	1
C44	ECQG1H472KZ	0.0047μF	1
C45	ECQG1H102KZ	0.001μF	1
C46	ECQG1H472KZ	0.0047μF	1
C47	ECQG1H102KZ	0.001μF	1
C48	ECQG1H472KZ	0.0047μF	1
C49	ECQG1H102KZ	0.001μF	1
C50	ECQG1H472KZ	0.0047μF	1
C51	ECQG1H102KZ	0.001μF	1
C52	ECEA0JU470	47μF, 6.3V	1
○ C53, 54	ECCR1H471J	470PF	2
○ C55, 56	ECKR1E473ZV	0.047μF	2
○ C58~61	ECKR1E473ZV	0.047μF	4

DP DRUM PERCUSSION CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	MN50015PGQ	Gate Array	1
IC2	MN231001PGW	Wave ROM	1
IC3	SVIGHA17008P	8 bit D-A Converter	1
IC4, 6	SVIGMSM4051R	8-channel Multiplexer	2
IC5	SVIGM5238L	Operational Amplifier	1
IC7, 8	SVIGM5218L	Operational Amplifier	2
COMPONENT COMBINATION			
Z1	EXKS14Z2073	1K/2KΩ, Ladder Network	1

Ref. No.	Part No.	Description	Per/Set
RESISTORS			
R4	ERDS2TJ472	4.7KΩ	1
R5	ERDS2TJ103	10KΩ	1
R6, 7	ERDS2TJ471	470Ω	2
R8	ERDS2TJ682	6.8KΩ	1
R9, 10	ERDS2TJ222	2.2KΩ	2
R15	ERDS2TJ222	2.2KΩ	1
R16	ERDS2TJ332	3.3KΩ	1
R17, 18	ERDS2TJ682	6.8KΩ	2
R19	ERDS2TJ332	3.3KΩ	1
R20	ERDS2TJ222	2.2KΩ	1
R23, 24	ERDS2TJ683	68KΩ	2
R25~28	ERDS2TJ473	47KΩ	4
CAPACITORS			
C4	ECEA1HU010	1μF, 50V	1
○ C5, 6	ECKR1E473ZV	0.047μF	2
○ C9	ECCR1H151J	150PF	1
○ C10, 11	ECKR1E473ZV	0.047μF	2
○ C14, 15	ECKR1E473ZV	0.047μF	2
○ C16	ECCR1H221J	220PF	1
○ C17	ECKR1E473ZV	0.047μF	1
○ C18	ECCR1H681J	680PF	1
○ C19	ECCR1H680J	68PF	1
○ C20	ECKR1E473ZV	0.047μF	1
○ C21	ECCR1H221J	220PF	1
○ C23	ECCR1H681J	680PF	1
○ C24	ECCR1H680J	68PF	1
○ C25	ECKR1E473ZV	0.047μF	1

EF EFFECTOR CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1, 9	SVIGM5218L	Operational Amplifier	2
IC2	SVIGUPD4066B	Quadruple Bilateral Switch	1
IC3~5	SVIGMSM4011	Quadruple NAND Gate	3
IC6~8	MN3006	BBD (128-stages)	3
TRANSISTORS			
S Q1, 2	2SC2320LFG	2SC1310FG	2
DIODES			
D1~6	MA165TA5		6
SEMI-FIXED RESISTOR			
VR1	EVSG0E1B223A	22KΩ B, BBD Bias	1
RESISTORS			
R1~6	ERDS2TJ474	470KΩ	6
R7	ERDS2TJ153	15KΩ	1
R8	ERDS2TJ103	10KΩ	1
R9	ERDS2TJ153	15KΩ	1

Ref. No.	Part No.	Description	Per/Set
R10	ERDS2TJ223	22KΩ	1
R11	ERDS2TJ153	15KΩ	1
R12	ERDS2TJ103	10KΩ	1
R13, 14	ERDS2TJ153	15KΩ	2
R15	ERDS2TJ223	22KΩ	1
R16	ERDS2TJ103	10KΩ	1
R17	ERDS2TJ223	22KΩ	1
R18~20	ERDS2TJ153	15KΩ	3
R21	ERDS2TJ223	22KΩ	1
R22	ERDS2TJ184	180KΩ	1
R23, 24	ERDS2TJ332	3.3KΩ	2
R25, 26	ERDS2TJ184	180KΩ	2
R27, 28	ERDS2TJ332	3.3KΩ	2
R29, 30	ERDS2TJ184	180KΩ	2
R31, 32	ERDS2TJ332	3.3KΩ	2
R33	ERDS2TJ184	180KΩ	1
R34, 35	ERDS2TJ223	22KΩ	2
R36	ERDS2TJ473	47KΩ	1
R37	ERDS2TJ153	15KΩ	1
R38	ERDS2TJ103	10KΩ	1
R39	ERDS2TJ154	150KΩ	1
R40	ERDS2TJ333	33KΩ	1
R41, 42	ERDS2TJ154	150KΩ	2
R43	ERDS2TJ153	15KΩ	1
R44	ERDS2TJ154	150KΩ	1
R45	ERDS2TJ333	33KΩ	1
R46	ERDS2TJ683	68KΩ	1
R47	ERDS2TJ153	15KΩ	1
R48	ERDS2TJ154	150KΩ	1
R49	ERDS2TJ333	33KΩ	1
R50	ERDS2TJ683	68KΩ	1
R51~54	ERDS2TJ333	33KΩ	4
[F] R55, 56 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	2
R57	ERDS2TJ473	47KΩ	1
R58	ERDS2TJ102	1KΩ	1
R59, 60	ERDS2TJ103	10KΩ	2
[F] R61~63 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	3
CAPACITORS			
(TF) C1, 2	ECQV1H334JZ	0.33μF	2
C3~5	ECEA1EU100	10μF, 25V	3
○ C6~11	ECCR1H151J	150PF	6
C12	ECEA1CU470	47μF, 16V	1
○ C13, 14	ECCR1H681J	680PF	2
C15	ECEA1CU470	47μF, 16V	1
○ C16	ECCR1H681J	680PF	1
C17	ECEA1CU470	47μF, 16V	1
○ C18	ECCR1H471J	470PF	1
C19	ECQG1H222KZ	0.0022μF	1
○ C20	ECCR1H101J	100PF	1
○ C21	ECCR1H471J	470PF	1
C22	ECQG1H222KZ	0.0022μF	1
○ C23	ECCR1H101J	100PF	1
C24	ECEA1HU010	1μF, 50V	1
C25	ECEA1CU470	47μF, 16V	1
C26, 27	ECEA1CU101	100μF, 16V	2
C28	ECEA1HU010	1μF, 50V	1
○ C29~32	ECKR1E473ZV	0.047μF	4
C33	ECEA1HU010	1μF, 50V	1

CP FRONT CONTROL PANEL CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM74LS138	Decoder	1
IC2~4	SVIGM74LS174	Latch	3
TRANSISTOR			
S Q1	2SA1015-GR	2SA933STRS	1
DIODES			
D1~16	MA165TA5		16
LIGHT EMITTING DIODES			
D17, 18, 20~22, 26	SVDGSEL4117R	LED (red)	6
D19, 23~25, 27~32	SVDGSEL4417G	LED (green)	10
SWITCHES			
	SSHG1045A	Push Switch	16
RESISTORS			
R1	ERDS2TJ332	3.3KΩ	1
R2	ERDS2TJ103	10KΩ	1
R3~18	ERDS2TJ221	220Ω	16
CAPACITORS			
○ C1, 2	ECKR1E473ZV	0.047μF	2

CPSL SIDE CONTROL PANEL CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	MN15524PGP	1 chip 4 bit Microcomputer	1
IC2~5	SVIGM74LS07	Hex Buffer O.C.	4
TRANSISTORS			
Q1~4	2SA830B		4
Q5, 6	2SC1047C		2
DIODES			
D2~87, 169, 170	MA165TA5		88
LIGHT EMITTING DIODES			
D88~99, 102~166, 168, 171, 172	SVDGSEL4117R	LED (red)	80
D100, 101, 167	SVDGSEL4417G	LED (green)	3

Ref. No.	Part No.	Description	Per/Set
OSCILLATOR			
X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
SWITCHES			
SW1	SSSG1011A SSHG1045A	Transpose Push Switch	1 83
VARIABLE RESISTOR			
VR1	EVD06510B24G	20KΩ B, Tempo Control	1
RESISTORS			
R1	ERDS2TJ222	2.2KΩ	1
R2~6	ERDS2TJ103	10KΩ	5
R7~10	ERDS2TJ152	1.5KΩ	4
R11~32	ERDS2TJ470	47Ω	22
R33, 34	ERDS2TJ472	4.7KΩ	2
R35	ERDS2TJ222	2.2KΩ	1
R36~59	ERDS2TJ152	1.5KΩ	24
CAPACITORS			
Ⓚ C1	ECEA0JK470	47μF, 6.3V	1
○ C2	ECKR1E473ZV	0.047μF	2
○ C3	ECCR1H471J	470PF	1
○ C4	ECKR1E473ZV	0.047μF	1

MKB MANUAL KEYBOARD CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUIT			
IC1	SVIGM74LS138	Decoder	1
DIODES			
S D1~44	MA162A	Switching	44
COMPONENT COMBINATION			
Z1	EXATA223S	Noise Suppression Filter	1
SWITCHES			
	SSPG6001A	Rubber Switch (6 continuous)	5
	SSPG7001A	Rubber Switch (7 continuous)	2
CAPACITORS			
○ C1	ECKR1E473ZV	0.047μF	1
C2	ECEA0JU470	47μF, 6.3V	1

PKB PEDAL KEYBOARD CIRCUIT

Ref. No.	Part No.	Description	Per/Set
DIODES			
S D1~13, 16	MA162A	Switching	14
SWITCHES			
	SHGG50A	Rubber Switch (5 continuous)	3

EXP EXPRESSION CIRCUIT

Ref. No.	Part No.	Description	Per/Set
Cds			
	SVEG5	Light Sensitive Device	1

EXLF EXLF CIRCUIT *[EZ] area

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGTC4069BP	Hex Inverter	1
IC2	SVIGM74LS05	Hex Inverter O.C.	1
IC3	SVIGM74LS07	Hex Buffer O.C.	1
COMPONENT COMBINATION			
Z1	EXBP86472JM	4.7KΩ×6	1
COILS			
L1	SLQG10W10D1P	Coil	1
L2	SLQG15W33AP	Coil	1
CAPACITOR			
○ C1	ECKR1E473ZV	0.047μF	1

AS AMP & POWER SUPPLY CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1 ⚠	SVIGM5291P	Switching Regulator	1
IC2 ⚠	SVIGM5F7815	Voltage Regulator	1
IC3 ⚠	SVIGM5F7915	Voltage Regulator	1
IC4 ⚠	SVIGS4132M2M	2-channel AF Power Amplifier	1
TRANSISTORS			
S Q1~3	2SC2320LFG	2SC1310FG	3
S Q4	2SA1015-GR	2SA933STRS	1
Q5 ⚠	2SB953AQP		1

Ref. No.	Part No.	Description	Per/Set
DIODES			
D1, 2 ⚠	SVDGERA1502Y	Rectifier	2
○ D3~6 ⚠	SVDS2V20	Rectifier	4
D7, 8	MA165TA5		2
D9 ⚠	SVDGRK14		1
D10 ⚠	MA2062LF	Zener	1
COILS & LINE FILTER			
L1 ⚠	SLQG10W2D1	Coil } EZ, XR and XL areas	1
L2 ⚠	SLTGLF3	Line Filter } EZ, XR and XL areas	1
L3	SLCGR8121D	Coil } EZ, XR and XL areas	1
L2 ⚠	SLTGLF3	Line Filter } Except for [EZ], [XR] and [XL] areas	1
L3	SLCG1A121T	Coil } Except for [EZ], [XR] and [XL] areas	1
VOLTAGE SELECTOR			
SW1 ⚠	SSRG100A	Except for [M] and [MC] areas	1
FUSES			
F1 ⚠	XBA1C12NU100	1.6A, 125V, M and MC areas	1
F1 ⚠	XBA2C12TB0	T1.25A, 250V } Except for [M] and [MC] areas	1
F2, 3 ⚠	XBA2C063TB0	T630mA, 250V } Except for [M] and [MC] areas	2
AC INLET COVER			
⚠	SJS9334A	XR and XL areas	1
⚠	SJS9231A	Except for [XR] and [XL] areas	1
RESISTORS			
R1~3	ERDS2TJ103	10KΩ	3
R4	ERDS2TJ102	1KΩ	1
R5	ERDS2TJ101	100Ω	1
R6, 7	ERDS2TJ223	22KΩ	2
R8	ERDS2TJ473	47KΩ	1
R9	ERDS2TJ472	4.7KΩ	1
R10	ERDS2TJ155	1.5MΩ	1
R11	ERDS2TJ105	1MΩ	1
R12	ERDS2TJ474	470KΩ	1
R13	ERDS2TJ104	100KΩ	1
R14	ERDS2TJ473	47KΩ	1
R15	ERDS2TJ224	220KΩ	1
[F] R17 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	1
Ⓕ R18 ⚠	ERX1ANJR47	0.47Ω, 1W	1
R19	ERDS2TJ101	100Ω	1
Ⓕ R20 ⚠	ERX1ANJ471	470Ω, 1W	1
R21	ERDS2TJ102	1KΩ	1
R22	ERDS2TJ332	3.3KΩ	1
R23, 24	ERDS2TJ333	33KΩ	2
R25	ERDS2TJ103	10KΩ	1
R26	ERDS2TJ222	2.2KΩ	1
R27	ERDS2TJ103	10KΩ	1
R28	ERDS2TJ222	2.2KΩ	1
R29~31	ERDS2TJ102	1KΩ	3
[F] R32 ⚠	ERD2FCG680	68Ω, 1/4W, Fuse Type	1
R33	ERDS2TJ473	47KΩ	1
R34	ERDS2TJ222	2.2KΩ	1
R35, 36	ERDS2TJ152	1.5KΩ	2
R37	ERDS2TJ473	47KΩ	1
R38	ERDS2TJ222	2.2KΩ	1
R39, 40	ERDS2TJ152	1.5KΩ	2
Ⓕ R41, 42 ⚠	ERD25FVJ4R7	2.2KΩ, 1/4W	2
R43	ERDS2TJ222	2.2KΩ	1

Ref. No.	Part No.	Description	Per/Set
CAPACITORS			
○ C1 ⚠	ECKCVA1472MF	4700PF, 250V, Line Capacitor	1
C2 ⚠	ECQU2A104MN	0.1μF, 250V, Across the Line Capacitor	1
C3 EZ XR XL ⚠	ECQE2A104MW	0.1μF, 250V, Across the Line Capacitor, [EZ], [XR] and [XL] areas	1
C4, 5	ECEA1VU222	2200μF, 35V	2
C6	ECEA1EU100	10μF, 25V	1
C7	ECEA1HU010	1μF, 50V	1
(MS) C9	ECEA50M2R2R	2.2μF, 50V	1
C10	ECEA1VU100	10μF, 35V	1
C11	ECQG1H102KZ	0.001μF	1
○ C12	ECKR1E473ZV	0.047μF	1
C13	ECEA0JU102	1000μF, 6.3V	1
C14, 15	ECEA1VU100	10μF, 35V	2
Ⓝ C16, 17	ECEA1HN010	1μF, 50V	2
○ C18, 19	ECCR1H221J	220PF	2
C20, 21	ECEA0JU101	100μF, 6.3V	2
C22	ECEA1VU101	100μF, 35V	1
○ C23	ECEA1VU221	220μF, 35V	1
C25, 26	ECEA1EU470	47μF, 25V	2
(TF) C27, 28	ECQV1H104JZ	0.1μF	2

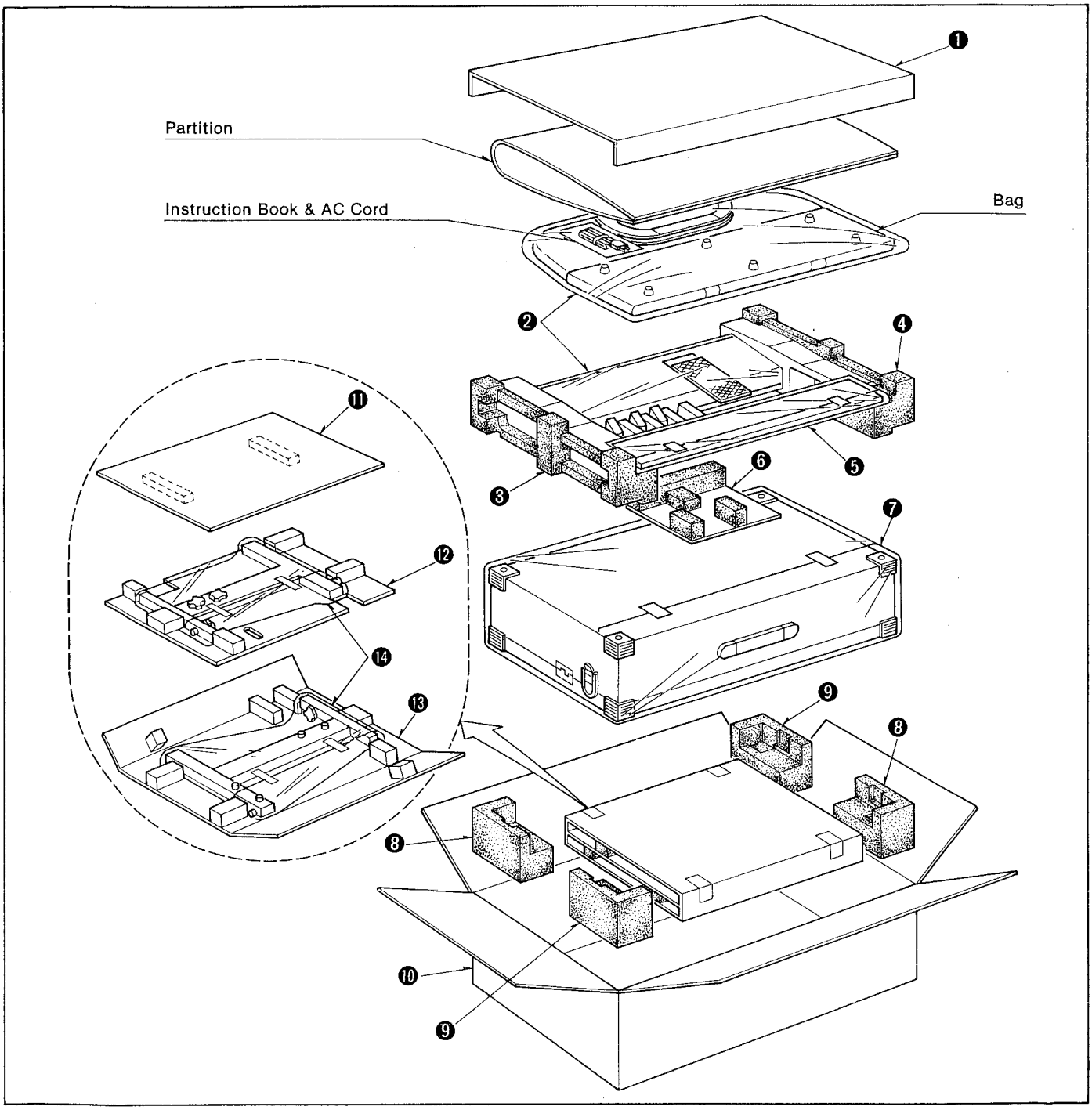
HP HEADPHONES CIRCUIT

Ref. No.	Part No.	Description	Per/Set
JACK			
JK1	SJJG100A	Headphones	1
RESISTORS			
Ⓕ R1, 2 ⚠	ERX1ANJ680	68Ω, 1W	2

WIRING PARTS (See wiring connection diagram on page II-1, II-2)

Ref. No.	Part No.	Description	Per/Set
	SWKG0326LTA	Connector with Wire	1
	SWKG0396ZA	Connector with Wire	1
○	SWKG04130ZA	Connector with Wire	1
○	SWKG04131LSA	Connector with Wire	1
○	SWKG0535SSA	Connector with Wire	1
	SWKG073SSA	Connector with Wire	1
○	SWKG1074SSA	Connector with Wire	1
○	SWKG1076LSA	Connector with Wire	1
○	SWKG1077SSA	Connector with Wire	1
	SWKG1335LSA	Connector with Wire	1
○	SWKG1336SSA	Connector with Wire	1
	SWKG1337SSA	Connector with Wire	2
○	SWKG1345LSA	Connector with Wire	1
○ EZ area	SWKG1415SSA	Connector with Wire	1
○	SWKG158ZA	Connector with Wire	1
○	SWKG1512ZA	Connector with Wire	1

PACKING



■ PACKING PARTS

Ref. No.	Part No.	Description	Per/Set
	SPNGC300EA	Packing Parts Ass'y	1
1	SPNG1865A	Pad (Upper Side)	(1)
2	SPHG1630A	Polyethlene Bag, for Bag and Pedal Box	(2)
3	SPNG5685A	Pad (Left Side)	(1)
4	SPNG5686A	Pad (Right Side)	(1)
5	SPHG1641A	Polyethlene Bag, for Crossber	(1)
6	SPNG1866A	Pad, for Pedal	(1)
7	SPHG1110A	Polyethlene Bag, for Upper Unit	(1)

Ref. No.	Part No.	Description	Per/Set
8	SPNG5683A	Corner Pad	(2)
9	SPNG5684A	Corner Pad	(2)
10	SPNG1864A	Carton Box	(1)
11	SPNG1862A	Pad }	1
12	SPNG1861A	Pad } for Leg	1
13	SPNG1860A	Pad }	1
14	SPHG1800A	Polyethlene Bag, for Leg	2